RouteFinder™
Internet Security Appliance

RF550VPN and RF560VPN

Setup Examples

Reference Guide

MultiTech® Systems

How-To: RF550VPN/RF560VPN Application Examples

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Product Number: S000258D

Revision	Date	Description
A	04/09/02	Initial release
B	04/17/02	Added example 3
B1	04/26/02	Minor changes to configuration tables. Update Screen shots for Sentinel production version 1.3. Added Manual choice for Secure Association under VPN Settings.
B2	05/06/02	Added notes stating that Secure Association set for Manual only works for static to static connection.
B3	05/20/02	Clarified Sentinel procedure and removed Dynamic IP option.
B4	06/27/02	Updated screen shots for RF550VPN/RF560VPN firmware V4.62. Corrections to example 2 using Dynamic IP.
B5	07/18/02	Added Dynamic IP back into example 4.
C	04/18/03	Changes to suppport software version 4.64
D	07/07/03	Add RF560VPN.

Contents

1. A LAN-to-LAN VPN configuration between Two RF550VPN/RF560VPNs. One at Site A and one at Site B. Both RouteFinders using static IP addresses at their WAN port gateways.

2. A LAN-to-LAN VPN configuration between an RF550VPN/RF560VPN at Site A using a static IP address and an RF550VPN/RF560VPN at Site B using dynamic IP addressing through their respective WAN ports.

3. A LAN-to-LAN VPN configuration between an RF550VPN/RF560VPN at Site A using a static IP address at the WAN port and an RF550VPN/RF560VPN at Site B using dynamic IP addressing through a modem connected to the serial port.

4. A Client-to-LAN configuration between an RF550VPN/RF560VPN at Site A with a SSH Sentinel Client.

The RouteFinder software is pre-installed on the RF550VPN/RF560VPN RouteFinder. Initial configuration is required in order for you to run the RouteFinder software and begin operation. The browser-based interface eases VPN configuration and management. The VPN functionality is based on IPSec and PPTP protocols and uses 168-bit Triple DES encryption to ensure that your information remains private.

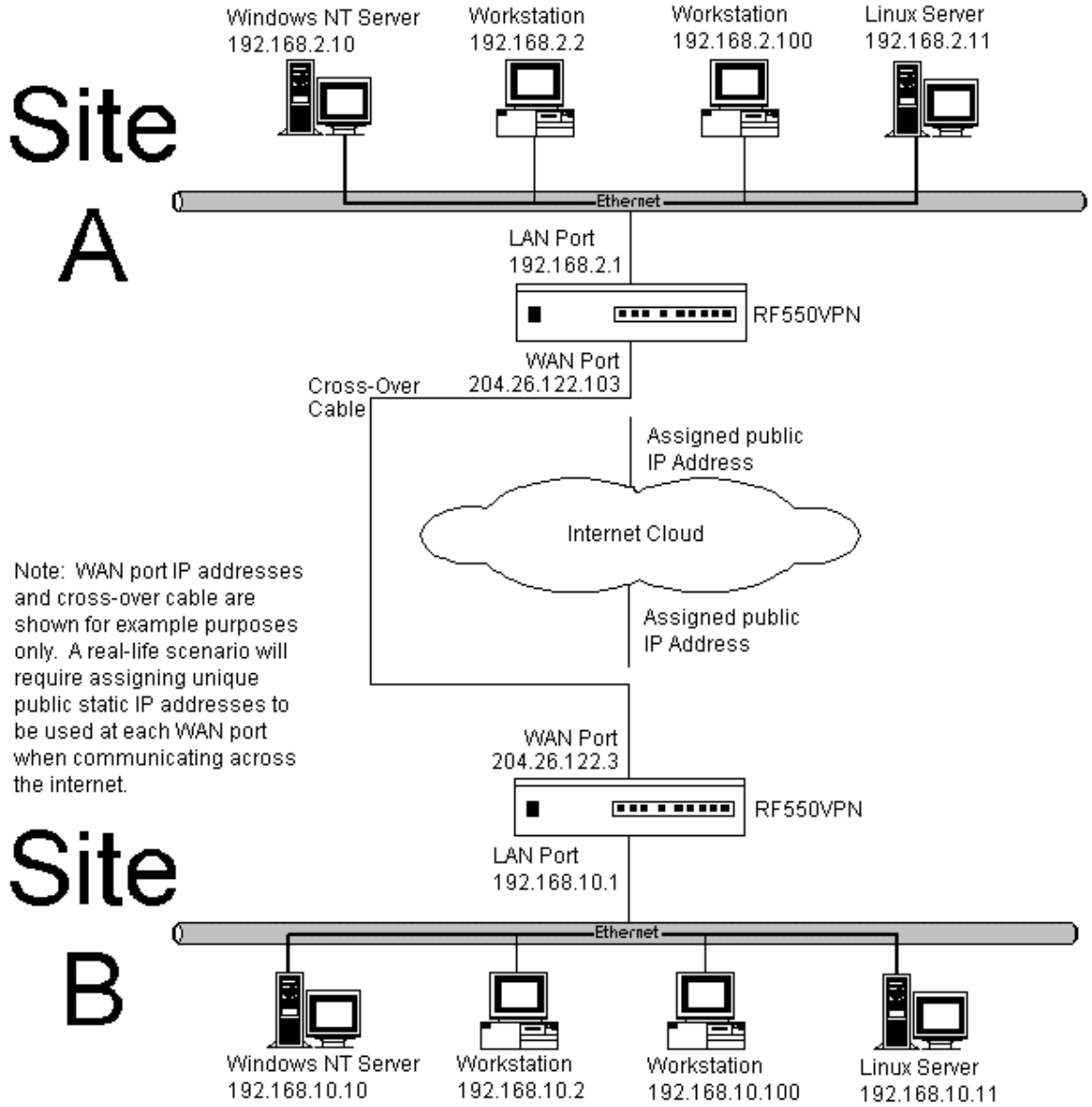
Caution: **Use a safe Password!** Your first name spelled backwards is not a sufficiently safe password; a password such as **xfT35$4** is better.

Example 1

This example provides a sample RouteFinder configuration and related address scheme for an application employing LAN-to-LAN IPSec VPN communication. This is an example on how to configure an RF550VPN/RF560VPN at Site A and an RF550VPN/RF560VPN at Site B so Site A and B can communicate through a secure connection over the Internet. This example assumes both VPN gateways have fixed IP addresses. This example does explain setting Secure Association in the VPN Settings as IKE or Manual mode.

LAN-to-LAN Fixed IP Configuration Diagram:

Note: The illustration labels the RouteFinder as the RF550VPN, but it stands for the RF560VPN also.



Example 1: LAN-to-LAN Configuration Chart

LAN-to-LAN Application – Site A: RF550VPN/RF560VPN-Static	LAN-to-LAN Application – Site B: RF550VPN/RF560VPN-Static
1. Domain name = Site-A.com	1. Domain name = Site-B.com
2. Public Class C = 204.26.122.x	2. Public Class C = 204.26.122.x
3. SETUP WIZARD > DEVICE IP SETTINGS IP Address: 192.168.2.1 IP Subnet Mask: 255.255.255.0	3. SETUP WIZARD > DEVICE IP SETTINGS IP Address: 192.168.10.1 IP Subnet Mask: 255.255.255.0
4. SETUP WIZARD > ISP SETTINGS Select 'Static IP Settings IP assigned by your ISP: 204.26.122.103 IP Subnet Mask: 255.255.255.0 ISP Gateway Address: 204.26.122.3	4. SETUP WIZARD > ISP SETTINGS Select 'Static IP Settings IP assigned by your ISP: 204.26.122.3 IP Subnet Mask: 255.255.255.0 ISP Gateway Address: 204.26.122.103
5. SETUP WIZARD > VPN SETTINGS Connection Name = SiteAtoB Disable (do not check) 'Enable UID' Disable (do not check) 'Keep Alive' Disable (do not check) 'NetBIOS Broadcast' Remote Site = LAN Remote IP Network = 192.168.10.0 Remote IP Netmask = 255.255.255.0 Remote Gateway IP = 204.26.122.3 Network Interface = WAN ETHERNET Secure Association = check IKE Perfect Forward Secure = check enabled Encryption Protocol = select 3DES Preshared Key = (must match key code at Site B) Key Life = set to default IKE Life Time = set to default	5. SETUP WIZARD > VPN SETTINGS Connection Name = SiteBtoA Disable (do not check) 'Enable UID' Disable (do not check) 'Keep Alive' Disable (do not check) 'NetBIOS Broadcast' Remote Site = LAN Remote IP Network = 192.168.2.0 Remote IP Netmask = 255.255.255.0 Remote Gateway IP = 204.26.122.103 Network Interface = WAN ETHERNET Secure Association = check IKE Perfect Forward Secure = check enabled Encryption Protocol = select 3DES Preshared Key = (must match key code at Site A) Key Life = set to default IKE Life Time = set to default

Address Table

Enter the configuration information (e.g., the Default Gateway and other IP addresses used) into the appropriate field of the Address Table below. Please print this page and use it to fill in your specific RF550VPN/RF560VPN information and keep for future reference. (Example information below is shown to match with the earlier diagram.)

	IP Address	Net Mask	Default Gateway
Network Port connected to the internal network (LAN ports) Site A	___.___.___.___ 192.168.2.1	___.___.___.___ 255.255.255.0	
Network Port connected to the external network (WAN port) Site A	___.___.___.___ 204.26.122.103	___.___.___.___ 255.255.255.0	___.___.___.___ 204.26.122.1
Network Port connected to the internal network (LAN ports) Site B	___.___.___.___ 192.168.10.1	___.___.___.___ 255.255.255.0	
Network Port connected to the external network (WAN port) Site B	___.___.___.___ 204.26.122.3	___.___.___.___ 255.255.255.0	___.___.___.___ 204.26.122.1

LAN-to-LAN Application – Site A: RF550VPN/RF560VPN-Static

1. Domain name = _____

2. Public Class C = ___.___.___.X

3. SETUP WIZARD > DEVICE IP SETTINGS
   IP Address: ___.___.___.___
   IP Subnet Mask: ___.___.___.___

4. SETUP WIZARD > ISP SETTINGS
   IP assigned by your ISP: ___.___.___.___
   IP Subnet Mask: 255.255.255.___
   ISP Gateway Address: ___.___.___.___

5. SETUP WIZARD > VPN SETTINGS
   Remote IP Network = ___.___.___.0
   Remote IP Netmask = 255.255.255.0
   Remote Gateway IP = ___.___.___.___

LAN-to-LAN Application – Site B: RF550VPN/RF560VPN-Static

1. Domain name = _____

2. Public Class C = ___.___.___.X

3. SETUP WIZARD > DEVICE IP SETTINGS
   IP Address: ___.___.___.___
   IP Subnet Mask: ___.___.___.___

4. SETUP WIZARD > ISP SETTINGS
   IP assigned by your ISP: ___.___.___.___
   IP Subnet Mask: 255.255.255.___
   ISP Gateway Address: ___.___.___.___

5. SETUP WIZARD > VPN SETTINGS
   Remote IP Network = ___.___.___.0
   Remote IP Netmask = 255.255.255.0
   Remote Gateway IP = ___.___.___.___

Software Configuration

Example 1: Configuration Procedure at Site A

1. Connect a workstation to one of the RF550VPN/RF560VPN's **LAN ports** via Ethernet at Site A.

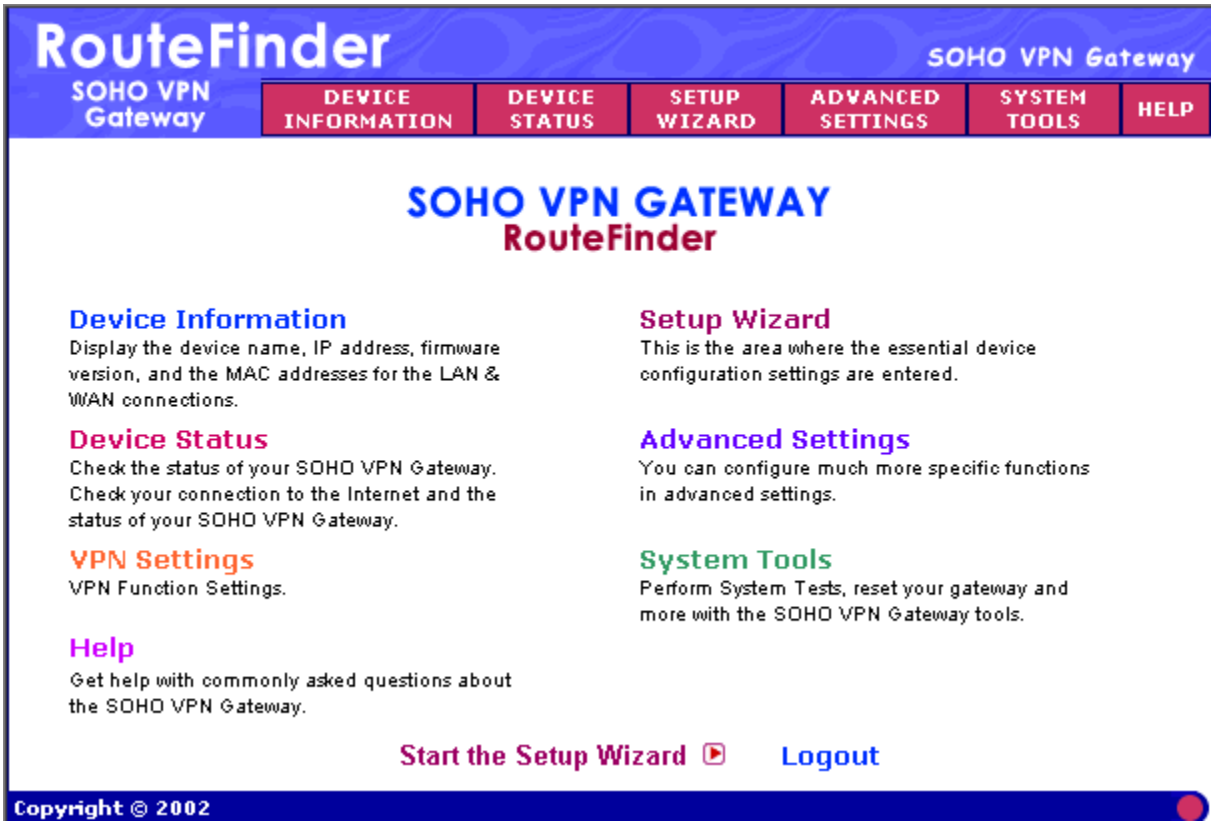
2. Set the workstation IP address to 192.168.2.x subnet.

3. Apply power to the RF550VPN/RF560VPN RouteFinder and allow the LEDs to stabilize on the unit.

4. Bring up your web browser on the workstation. At the Web browser's address line, type the Gateway address http://192.168.2.1 and press the **Enter** key.

   Note: Make sure your workstation's IP address is in the same network as the router's address. **WINIPCFG** and **IPCONFIG** are tools for finding a computer's default gateway and MAC address. In Windows 98/Me you can type **WINIPCFG**. In Windows 2000/NT, you can type **IPCONFIG**.

5. After typing the IP Address in the Web browser, the RF550VPN/RF560VPN main menu displays.


RouteFinder
SOHO VPN Gateway
SOHO VPN Gateway
DEVICE INFORMATION
DEVICE STATUS
SETUP WIZARD
ADVANCED SETTINGS
SYSTEM TOOLS
HELP
SOHO VPN GATEWAY
RouteFinder
Device Information
Display the device name, IP address, firmware version, and the MAC addresses for the LAN & WAN connections.
Device Status
Check the status of your SOHO VPN Gateway. Check your connection to the Internet and the status of your SOHO VPN Gateway.
VPN Settings
VPN Function Settings.
Help
Get help with commonly asked questions about the SOHO VPN Gateway.
Setup Wizard
This is the area where the essential device configuration settings are entered.
Advanced Settings
You can configure much more specific functions in advanced settings.
System Tools
Perform System Tests, reset your gateway and more with the SOHO VPN Gateway tools.
Start the Setup Wizard
Logout
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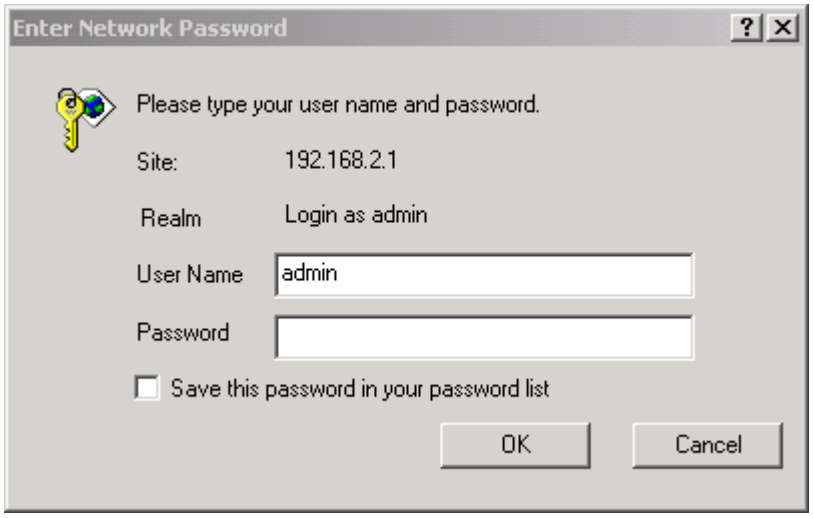
6. On the Main Menu, click the **Setup Wizard** button. The **Password** dialog box displays.

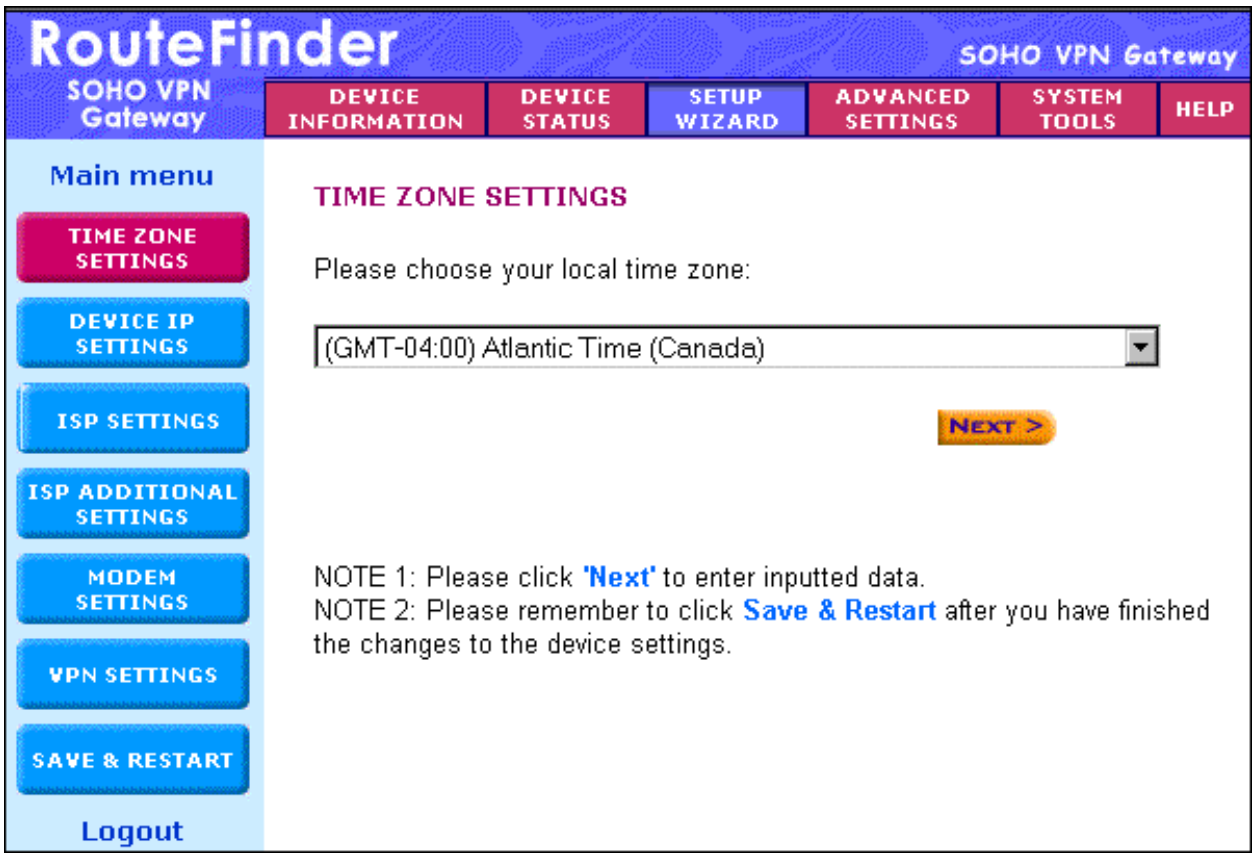
7. Type **admin** (**admin** is the default user name) in the user name box and leave the password box empty.



Note: To change your password after logging in, select the **Advanced Settings** button and **Administrative Settings**.

8. Click **OK**. The **Setup Wizard** screen displays a step-by-step process that lets you input all of the basic settings to configure your RF550VPN/RF560VPN.

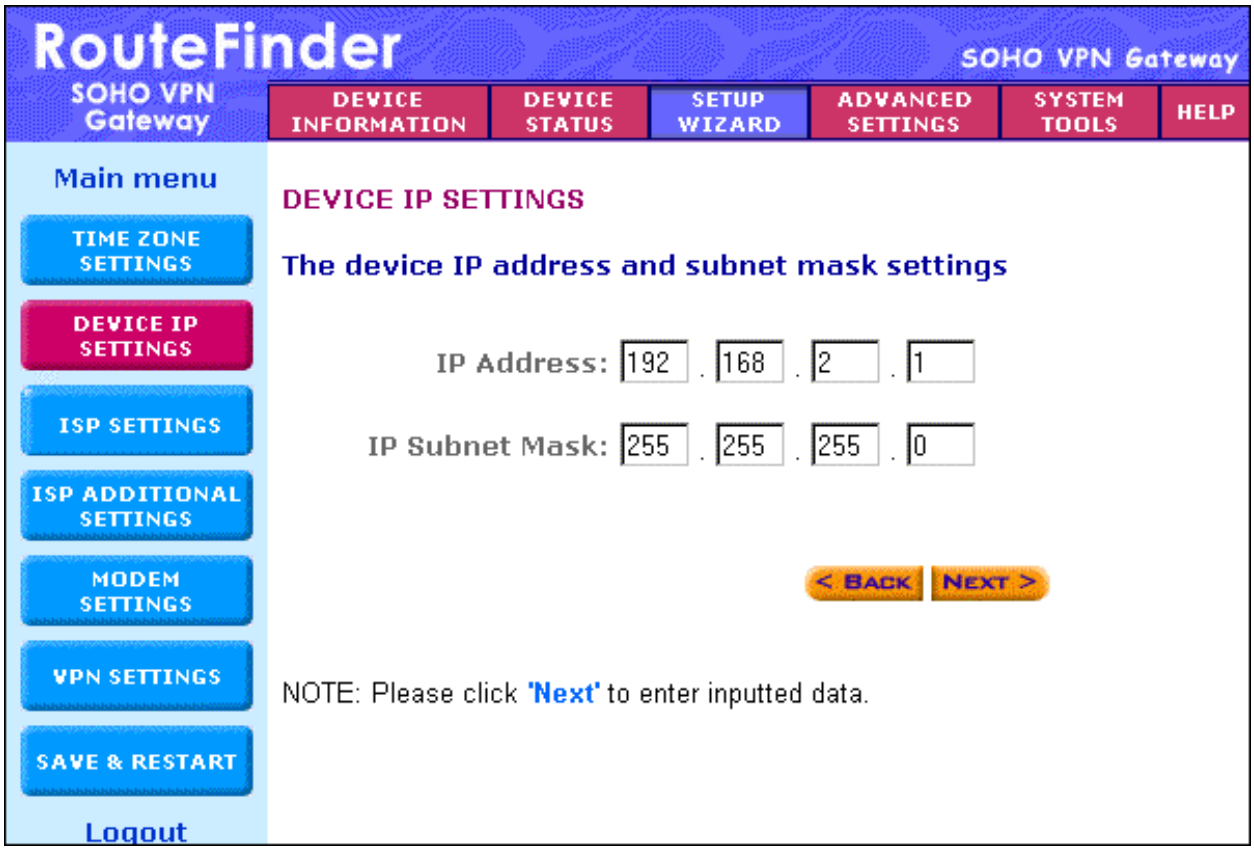
9. Select the **Time Zone**, and then click the **Next** button to continue.



10. For **Device IP Settings** enter the internal LAN IP address and subnet mask that you want assigned to the LAN ports of the RF550VPN/RF560VPN. This is not the IP address from your ISP but the local internal LAN IP address. The default IP address is **192.168.2.1** and will be used for our example.

    Device IP Address: 192.168.2.1.
    Device IP Subnet Mask: 255.255.255.0

    Click the **Next** button.



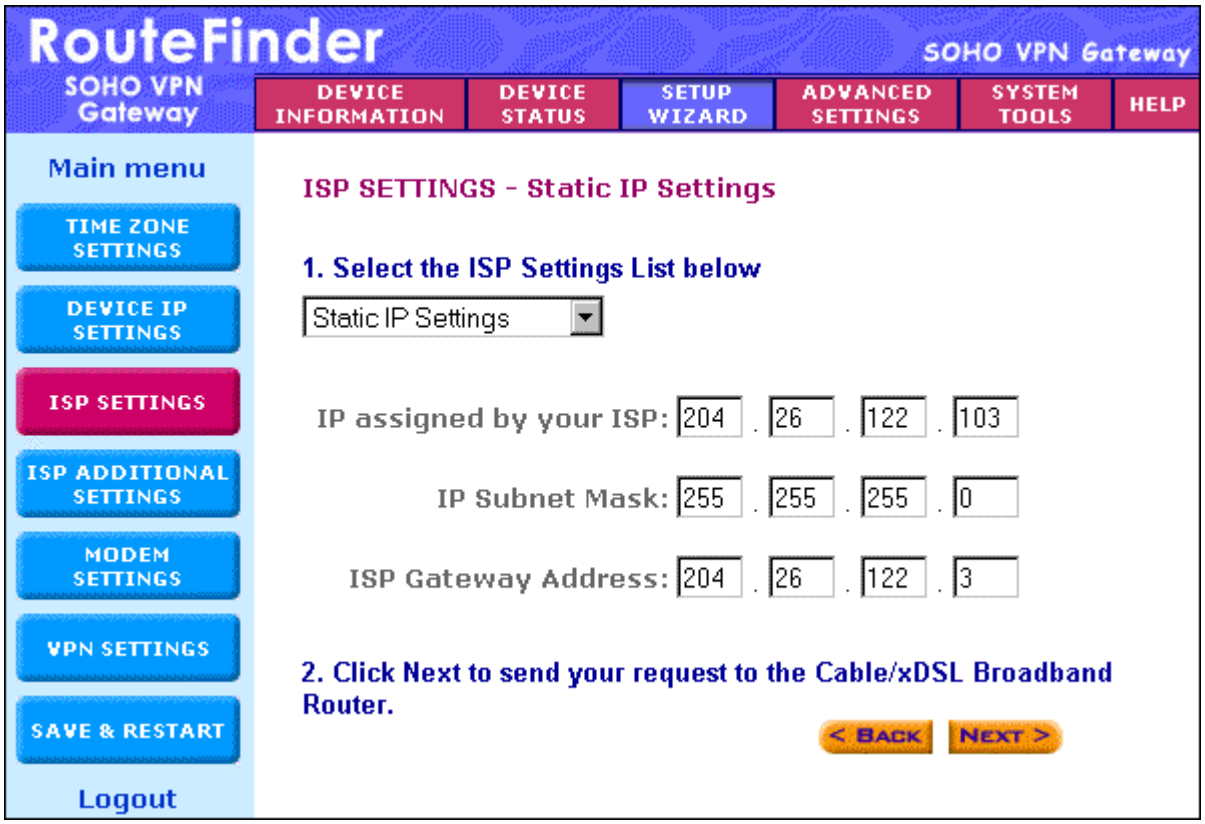
11. For **ISP Settings,** select **Static IP Settings** and enter the following information.

    a) **IP Assigned by your ISP:** This is the IP address of the WAN port on the RF550VPN/RF560VPN at Site A.
    (Ex: 204.26.122.103)

    b) **IP Subnet Mask:** This is the IP address of the subnet mask for the WAN port on the RF550VPN/RF560VPN.
    (Ex: 255.255.255.0)

    c) **IP Gateway Address:** This is the IP address of the WAN port on the RF550VPN/RF560VPN at Site B.
    (Ex: 204.26.122.3)

    Click the **Next** button.


RouteFinder
SOHO VPN Gateway
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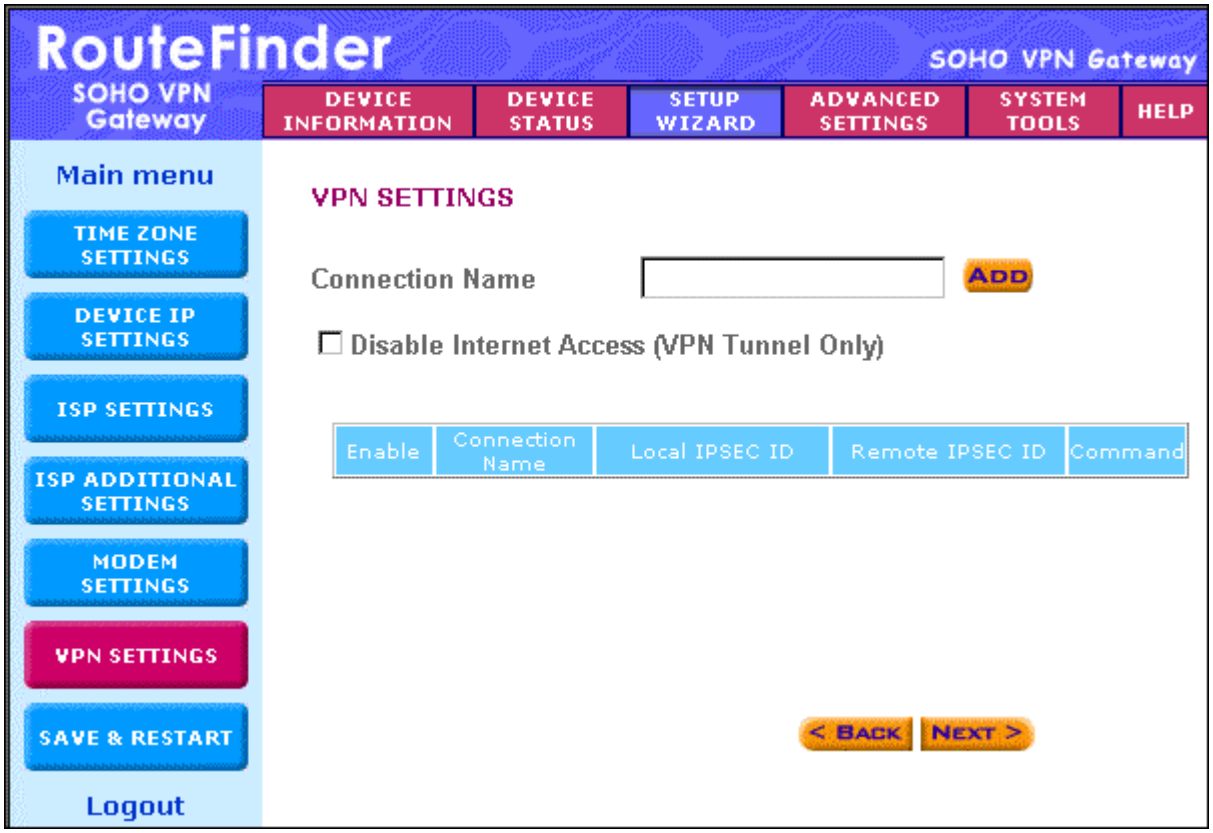
DEVICE INFORMATION
DEVICE STATUS
SETUP WIZARD
ADVANCED SETTINGS
SYSTEM TOOLS
HELP
Main menu
TIME ZONE SETTINGS
DEVICE IP SETTINGS
ISP SETTINGS
ISP ADDITIONAL SETTINGS
MODEM SETTINGS
VPN SETTINGS
SAVE & RESTART
Logout
ISP SETTINGS - Static IP Settings
1. Select the ISP Settings List below
Static IP Settings
IP assigned by your ISP: 204 . 26 . 122 . 103
IP Subnet Mask: 255 . 255 . 255 . 0
ISP Gateway Address: 204 . 26 . 122 . 3
2. Click Next to send your request to the Cable/xDSL Broadband Router.
< BACK
NEXT >

Note: For this scenario of connecting two RouteFinders back-to-back it is not necessary to enter any information for the **ISP Additional Settings** or **Modem Settings**.

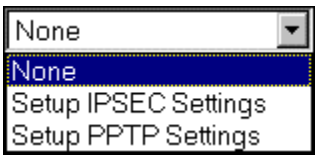
12. Click the button on the left side of the screen for **VPN Settings**. Use this screen to setup your LAN-to-LAN VPN connection.

13. **For the RF550VPN:** In the **Connection Name** field, type a name that identifies for you a connection that you would like to make. (Ex: **SiteAtoB**). Click the **Add** button.

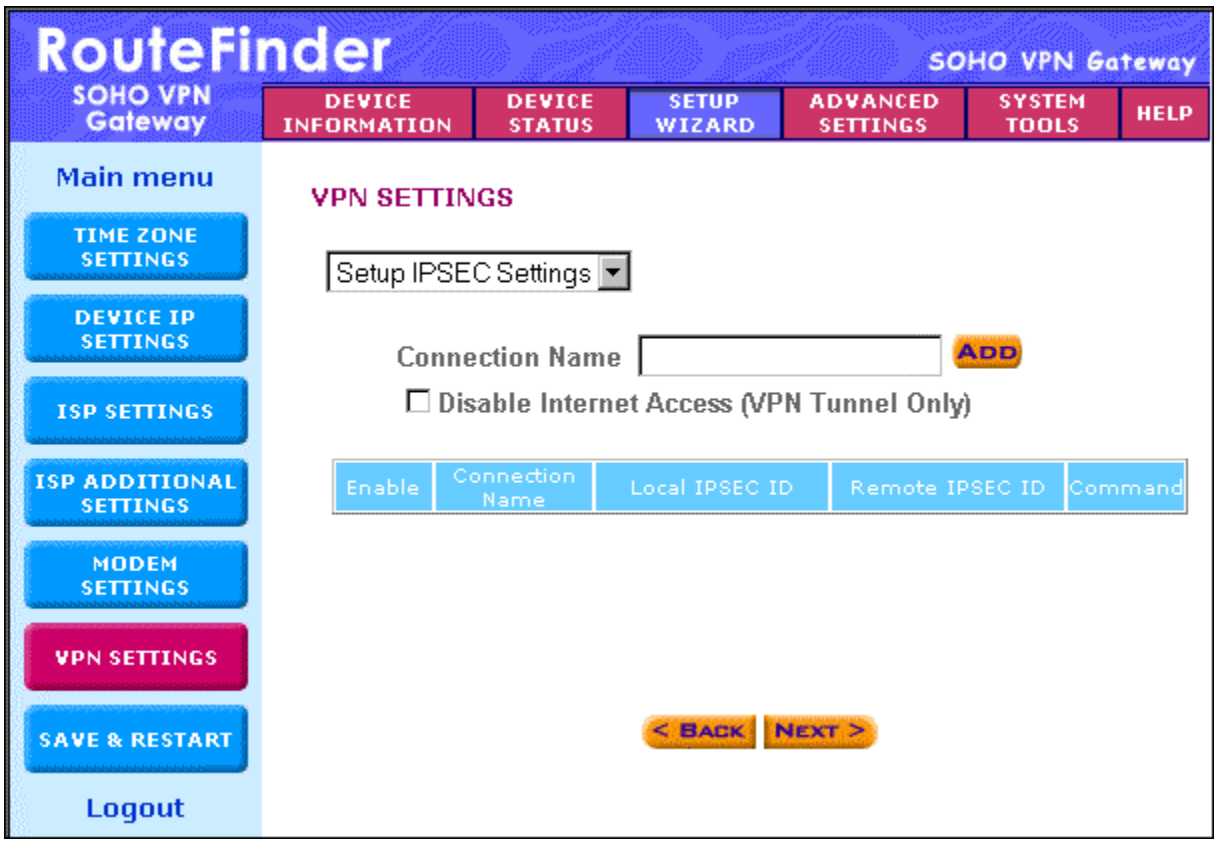


For the RF560VPN:

From the **VPN Settings** drop-down list box, select the type of VPN Connection you want to set:



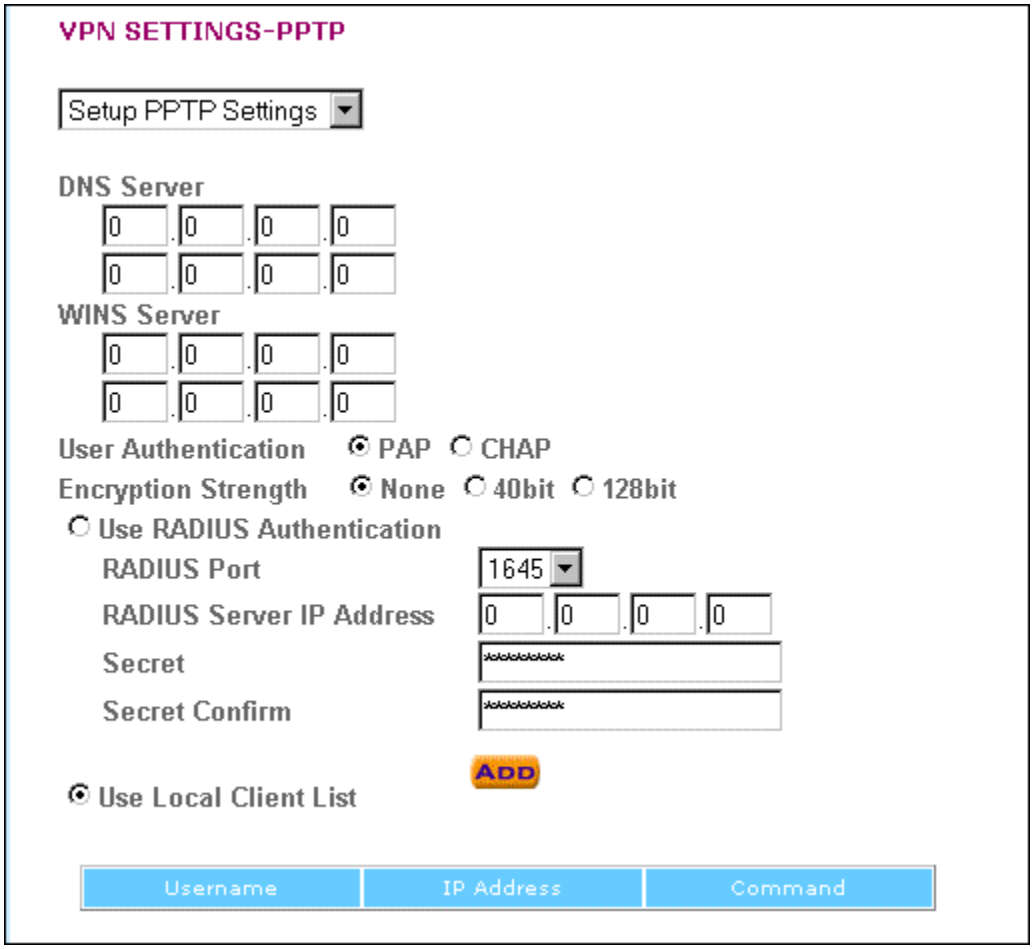
If you select Setup IPSEC Settings, the following screen displays:



- In the **Connection Name** field, type a name that describes a connection you would like to make.
- Example: **Site A**.
- Click the **Add** button, and the **VPN Settings** detail screen will display (see the next screen). Once you have entered the settings, the **Connection Name** displays on the lower half of the screen (above).
- Click the checkbox if you want to **Disable Internet Access (VPN Tunnel Only).**
- You can then edit, delete, or enable/disable this connection by clicking the corresponding buttons.
- To enable this connection, check the **Enable** box.

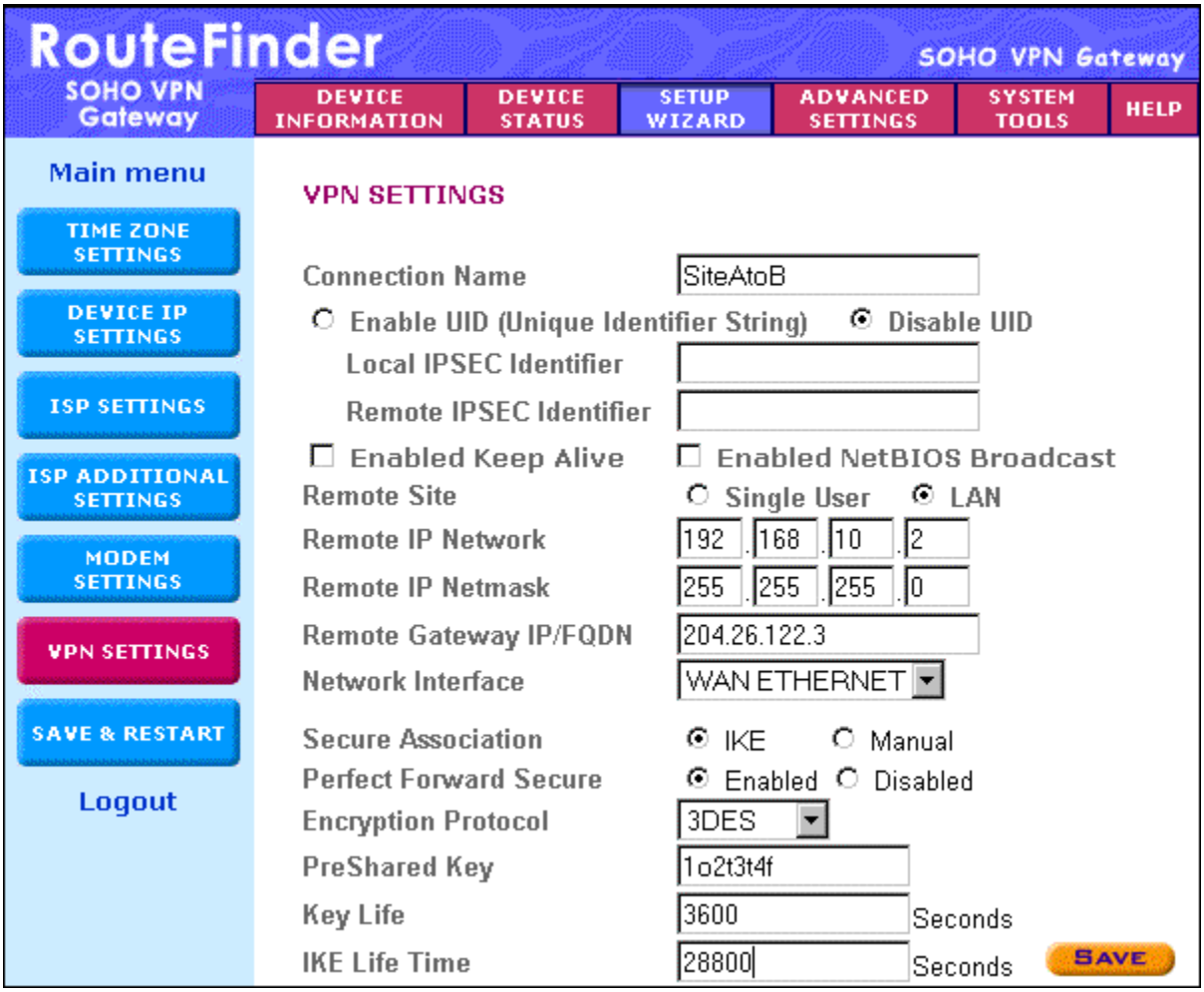
Note: If you uncheck the **Enable** box, the connection will not be active, but the parameters will remain on the screen for you to enable, edit, or delete as desired.

If you select Setup PPTP Settings, the following screen displays:



- **DNS Server** – Enter the address of the DNS Server to be used.
- **WINS Server** – Enter the address of WINS Server to be used.
- **User Authentication** – Select the User Authentication method to be used.
- **Encryption Strength** – Select the Encryption Strength desired.
- **Use RADIUS Authentication:**
  Check the Use RADIUS Authentication button to enable RADIUS. Then the following information:
  - **RADIUS Port** – Select the port number.
  - **RADIUS Server IP Address** – Enter the RADIUS Server IP Address.
  - **Secret** – Enter a secret password.
  - **Secret Confirm** – Retype the secret password for verification.
- **Use Local Client List** – Check this radio button to have your local client list used by the program.

14a. The **VPN Settings** screen for entering specific VPN settings will display. The screen pictured below assumes **IKE** is selected as the **Secure Association**. The **Connection Name** (**SiteAtoB**) defaults into the first field. Two configuration choices are available for the Secure Association: **IKE** and **Manual**.



a) Select **Disable UID** and leave **Local IPSec Identifier** and **Remote IPSec Identifier** blank.

b) Do **not** check **Enabled Keep Alive**.

c) Do **not** check **Enabled NetBIOS Broadcast**.

d) **Remote Site –** Select **LAN.**

e) **Remote IP Network –** Enter the **Remote IP Network** address (**LAN**) for Site B.

f) (Ex: **192.168.10.0**)

g) **Remote IP Netmask –** Enter the **Remote IP Netmask** address for Site B. (Ex: **255.255.255.0**)

h) **Remote Gateway IP –** Enter the **Remote Gateway IP** address (**WAN**) for Site B.

i) (Ex: **204.26.122.3**)

j) **Network Interface –** Select the **Network Interface** from the drop-down list box. (Ex: **WAN Ethernet**)

k) **Secure Association –** Select **IKE** to set how inbound packets will be filtered. **IKE** is the default. **IKE** primarily encompasses router key exchange and the negotiation of security policy. Selecting **IKE** will display the following fields.

l) **Perfect Forward Secure –** Check the **Enabled** button.

m) **Encryption Protocol** – Select the encryption protocol used for your configuration. The default protocol for the RF550VPN/RF560VPN communicating with another RF550VPN/RF560VPN is **3DES**. (Ex: **3DES**)

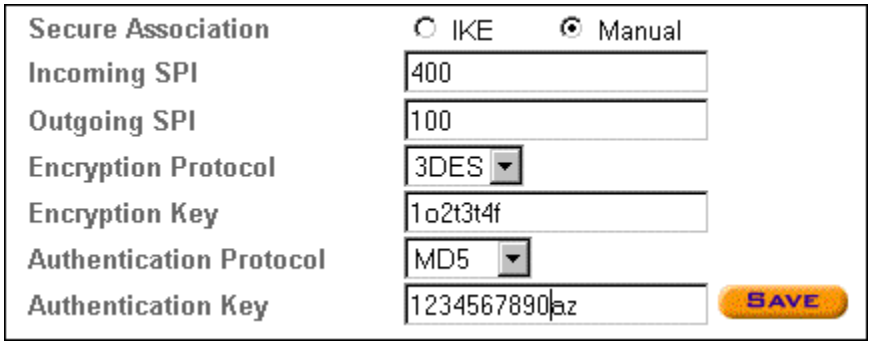
n) **PreShared Key –** Enter the **PreShared Key** name (you can enter an alphanumeric name but it needs to match the security code for the RouteFinder at Site B).

o) **Key Life –** Enter the amount of time that tells the router to renegotiate the Key. For example, 3600 seconds is 60 minutes.

p) **IKE Life Time –** Enter the amount of time that tells the router to renegotiate the IKE security association. For example, 28800 seconds is 8 hours.

14b. The screen pictured below assumes **Manual** as the **Secure Association** is selected on the VPN Settings screen. The **Connection Name** (**SiteAtoB**) defaults into the first field. Continue to enter the following settings:

Note: If **Secure Association** is set to **Manual**, the two RF550VPN/RF560VPNs must communicate with Static IP addresses at both ends.



Note: Enter all data for **a)** through **h)** as illustrated above. Then complete the following:

i) **Secure Association –** Selecting **Manual** instead of **IKE** will set how inbound packets will be filtered and then the following fields display.

j) **Incoming SPI –** Enter the incoming SPI that the remote VPN gateway, at Site B, will use to identify this Security Association. Enter a three-digit number between 100 and 400. This value must match the outgoing SPI value entered at the remote VPN gateway at Site B. (Ex: 400)

k) **Outgoing SPI** – Enter the outgoing SPI that the Site A VPN gateway will use to identify this Security Association. Enter a three-digit number between 100 and 400. This value must match the incoming SPI value entered at the remote VPN gateway at Site B. (Ex: 100)

l) **Encryption Protocol** – Select an appropriate encryption algorithm: Null**, DES, 3DES**. **3DES** is the recommended choice.

m) **Encryption Key –** Enter a string of characters to be used to encrypt and decrypt transmitted data between the two RouteFinders. The string is made up of 8-16 alphanumeric characters and needs to match the **Encryption Key** for the RouteFinder at Site B. (Ex: 1o2t3t4f)

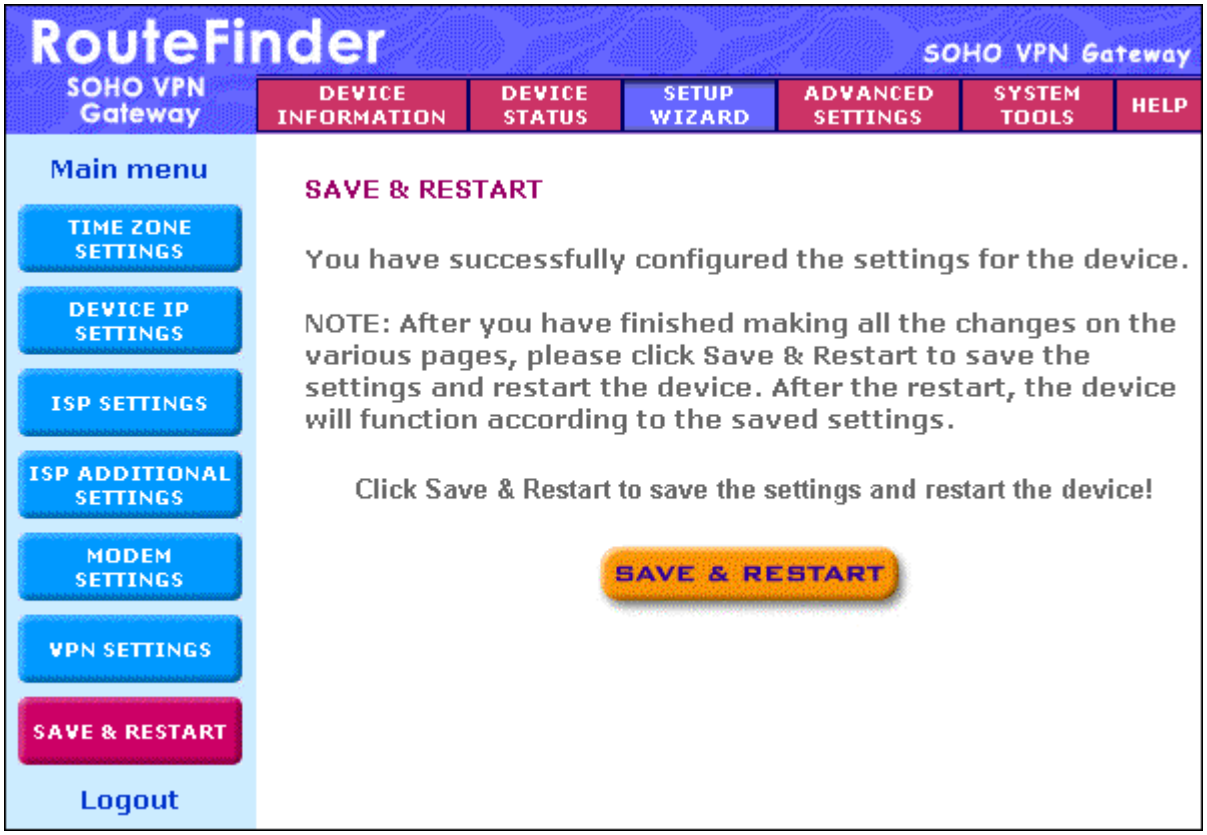
n) **Authentication Protocol** – Select an appropriate authentication algorithm: **MD5** or **SHA-1. MD5** is the recommended choice.

o) **Authentication Key –** Enter a string of characters to be used as a key for authentication between the two RouteFinders. The string is similar to a password and is made up of 8-16 alphanumeric characters and needs to match the **Authentication Key** for the VPN at Site B. (Ex: 1234567890az)

15. Once the VPN settings are entered, click on the **Save** button. The **Connection Name** will display on the lower half of the screen and on the initial VPN Settings screen. You can enable/disable, edit, or delete this connection by clicking the corresponding buttons. To enable this connection, check the **Enable** box that appears to the left of the connection name.

Note: If you uncheck the **Enable** box, the parameters will remain in the table for you to enable/disable, edit, or delete at any time.

16. After you have finished making all the changes on the various pages, click **Save and Restart** to save the settings and restart the device**.** After the restart, the device will function according to the saved settings.


RouteFinder
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ISP SETTINGS
ISP ADDITIONAL SETTINGS
MODEM SETTINGS
VPN SETTINGS
SAVE & RESTART
Logout
SAVE & RESTART
You have successfully configured the settings for the device.
NOTE: After you have finished making all the changes on the various pages, please click Save & Restart to save the settings and restart the device. After the restart, the device will function according to the saved settings.
Click Save & Restart to save the settings and restart the device!
SAVE & RESTART

17. During the save and restart process, system messages will let you know that you have successfully configured the settings for the device and saved the settings. You will see a status bar across the bottom of your browser showing the progress of the startup process. The RouteFinder home page will be loaded automatically after restart is completed.

This completes the configuration of the RF550VPN/RF560VPN at Site A. Now move to Site B and configure that RF550VPN/RF560VPN, from a workstation through one of its LAN ports, as done for Site A.

Example 1: Configuration Procedure at Site B

1. Connect a workstation to one of the RF550VPN/RF560VPN's **LAN ports** via Ethernet for Site B.

   Note: It is assumed that the IP Address of the RouteFinder's **LAN** at Site B (Ex: 192.168.10.1) has already been changed from it's default (192.168.2.1) so it does not conflict with the IP Address of the RouteFinder's **LAN** at Site A (Ex: 192.168.2.1).

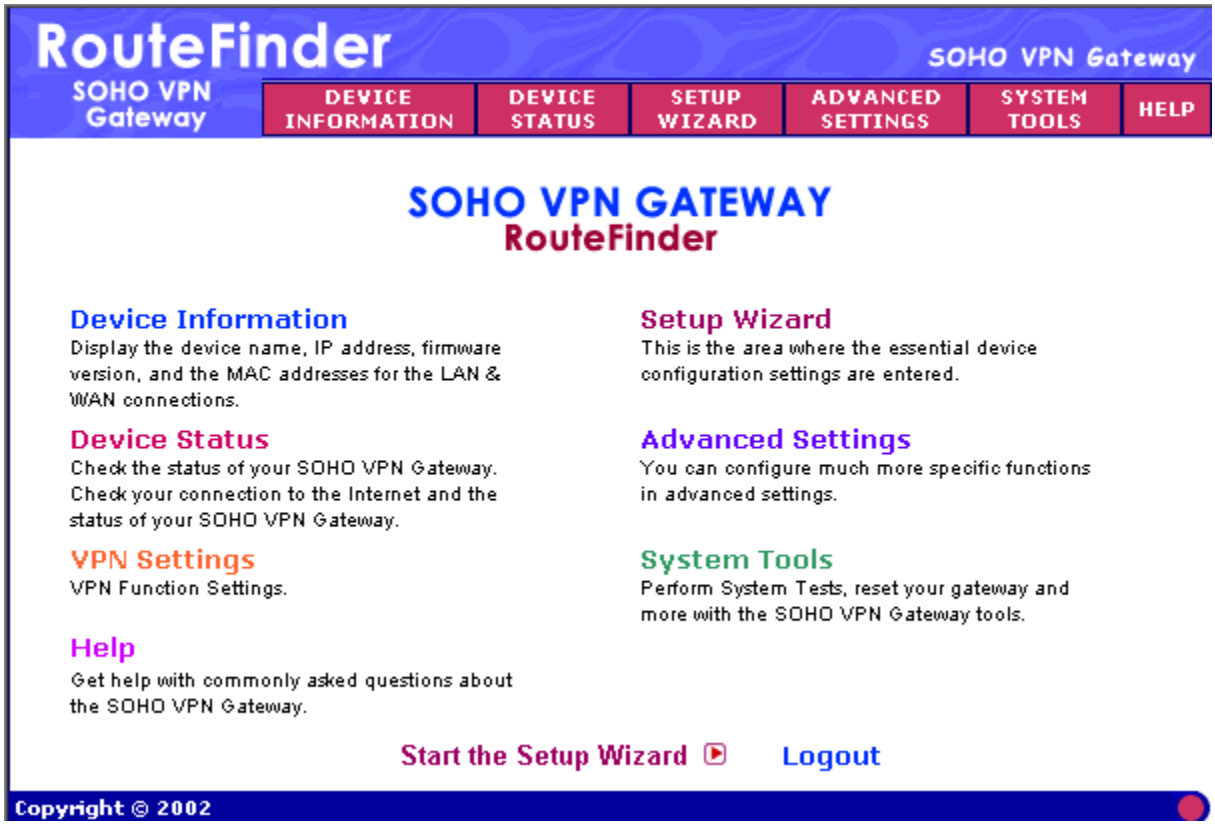
2. Set the workstation IP address to 192.168.10.x subnet.

3. Apply power to the RF550VPN/RF560VPN RouteFinder and allow the LEDs to stabilize on the unit.

4. Bring up your web browser on the workstation. At the web browser's address line, type the Gateway address http://192. 168.10.1 and press the Enter key.

   Note: Make sure your workstation's IP address is in the same network as the router's address. **WINIPCFG** and **IPCONFIG** are tools for finding a computer's default gateway and MAC address. In Windows 98/Me you can type **WINIPCFG**. In Windows 2000/NT, you can type **IPCONFIG**.

5. After typing the IP Address in the web browser, the RF550VPN/RF560VPN main menu displays.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DEVICE STATUS
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Advanced Settings
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System Tools
Perform System Tests, reset your gateway and more with the SOHO VPN Gateway tools.
Start the Setup Wizard
Logout
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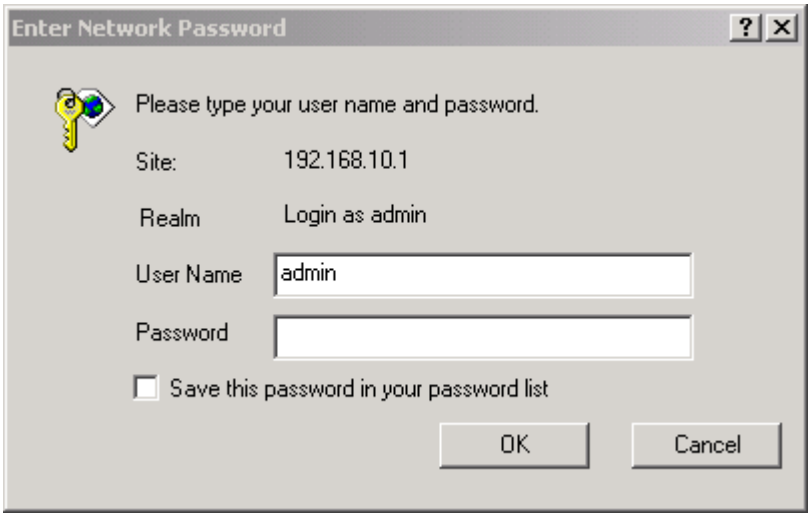
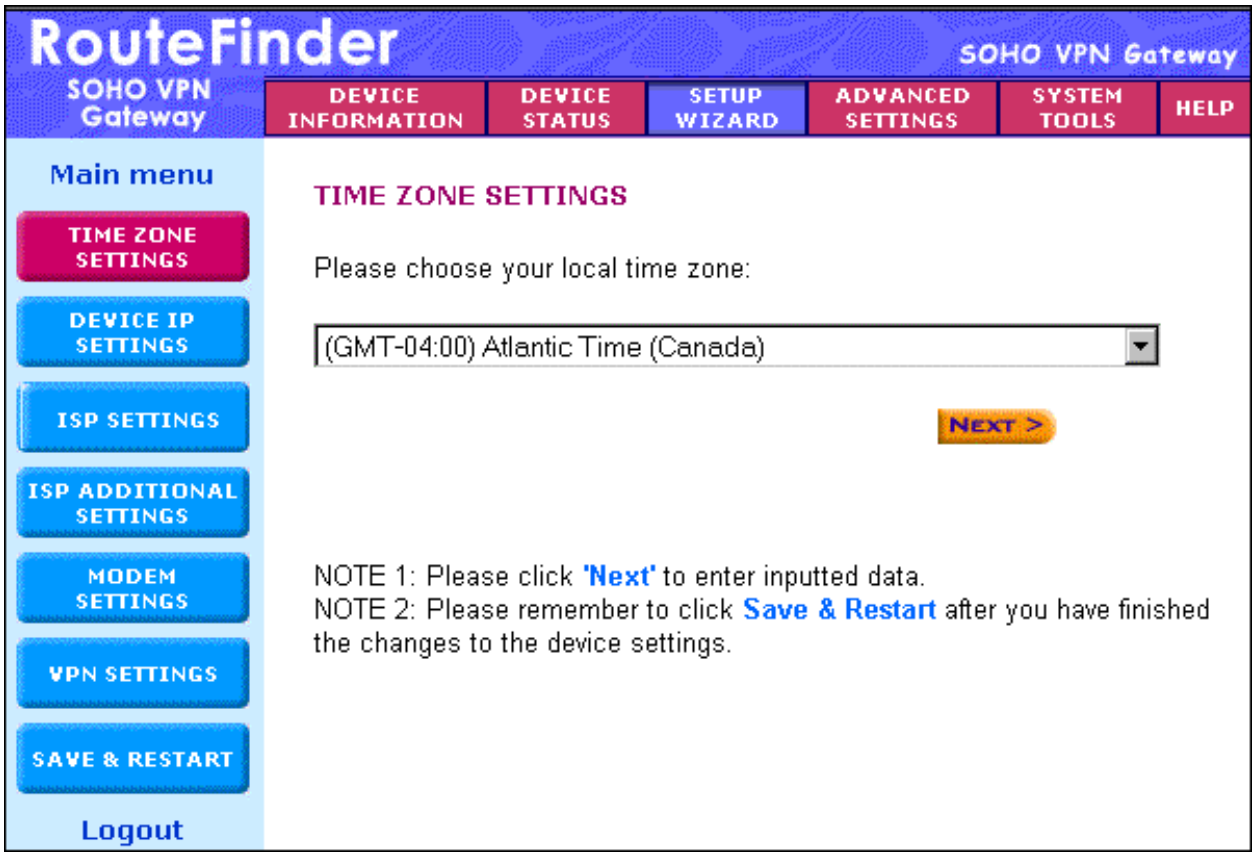
6. On the Main Menu, click the **Setup Wizard** button. The **Password** dialog box displays.
7. Type **admin** (**admin** is the default user name) in the user name box and leave the password box empty.



Note: To change your password after logging in, select the **Advanced Settings** button and **Administrative Settings**.

8. Click **OK**. The **Setup Wizard** screen displays a step-by-step process that lets you input all of the basic settings to configure your RF550VPN/RF560VPN.
9. Select the **Time Zone**, and then click the **Next** button to continue.



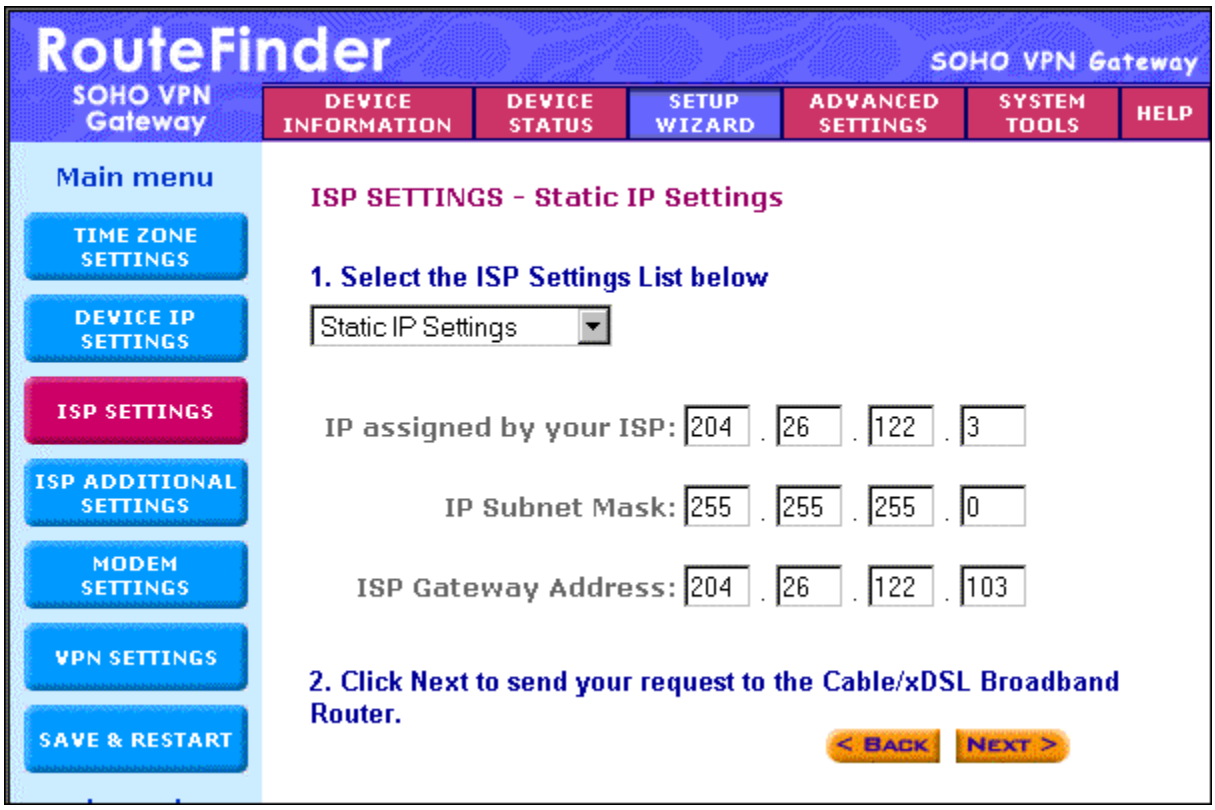
10. For **Device IP Settings** enter the internal LAN IP address and subnet mask that you want assigned to the LAN ports of the RF550VPN/RF560VPN. This is not the IP address from your ISP but the local internal LAN IP address. The default IP address is **192.168.2.1** but for our example we will use **192.168.10.1**.

    Device IP Address: 192.168.10.1.
    Device IP Subnet Mask: 255.255.255.0

    Click the **Next** button.

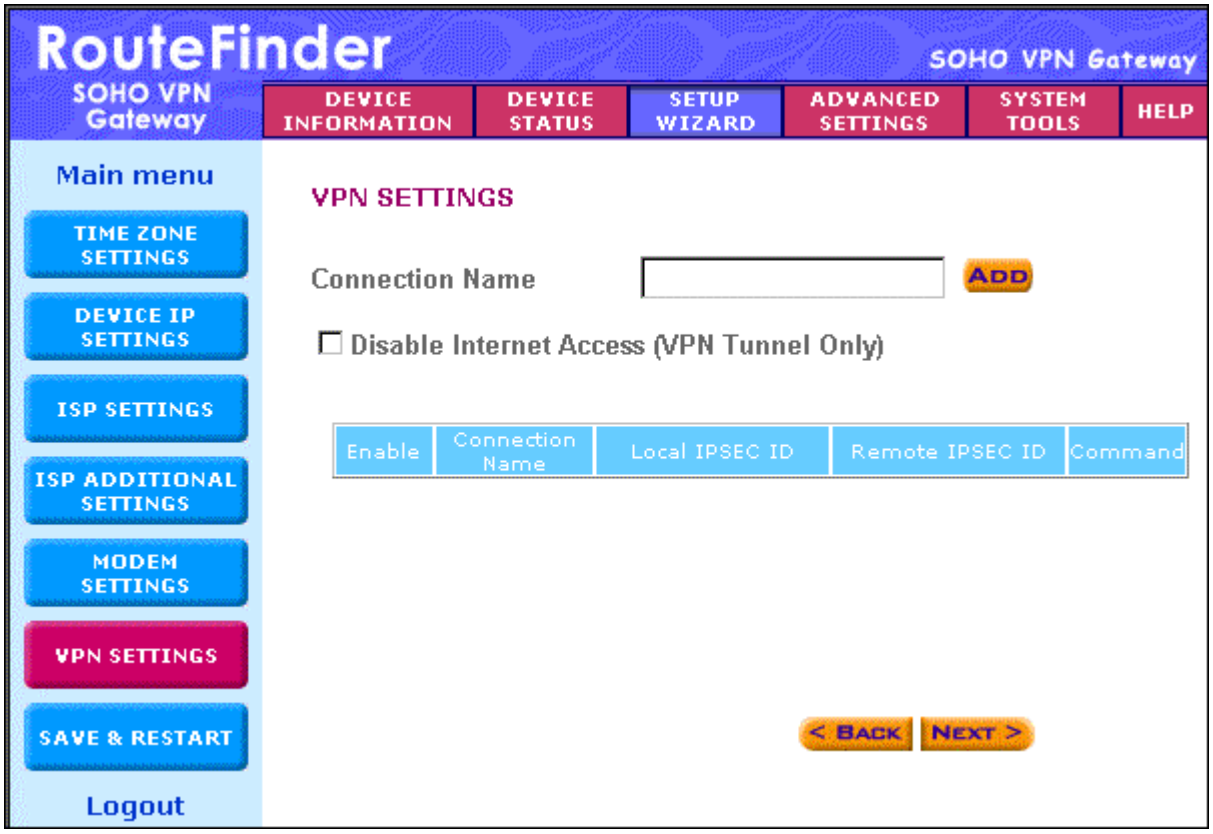
11. For **ISP Settings,** check the box **Your ISP requires you to input IP settings'** and enter the following information.
    a) **IP Assigned by your ISP:** This is the IP address of the WAN port on the RF550VPN/RF560VPN at Site B.
    (Ex: 204.26.122.3)
    b) **IP Subnet Mask:** This is the IP address of the subnet mask for the WAN port on the RF550VPN/RF560VPN at Site B. (Ex: 255.255.255.0)
    c) **IP Gateway Address:** This is the IP address of the WAN port on the RF550VPN/RF560VPN at Site A.
    (Ex: 204.26.122.103)

    Click the **Next** button.


RouteFinder
SOHO VPN Gateway
SOHO VPN Gateway
DEVICE INFORMATION
DEVICE STATUS
SETUP WIZARD
ADVANCED SETTINGS
SYSTEM TOOLS
HELP
Main menu
TIME ZONE SETTINGS
DEVICE IP SETTINGS
ISP SETTINGS
ISP ADDITIONAL SETTINGS
MODEM SETTINGS
VPN SETTINGS
SAVE & RESTART
ISP SETTINGS - Static IP Settings
1. Select the ISP Settings List below
Static IP Settings
IP assigned by your ISP: 204 . 26 . 122 . 3
IP Subnet Mask: 255 . 255 . 255 . 0
ISP Gateway Address: 204 . 26 . 122 . 103
2. Click Next to send your request to the Cable/xDSL Broadband Router.
< BACK
NEXT >

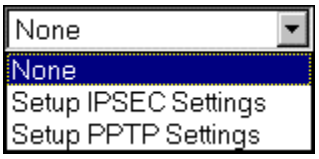
Note: For this scenario of connecting two RouteFinders back-to-back it is not necessary to enter any information for the **ISP Additional Settings** or **Modem Settings**.

12. Click the button on the left side of the screen for **VPN Settings**. Use this screen to setup your LAN-to-LAN VPN connection.
13. **For the RF550VPN:** In the **Connection Name** field, type a name that identifies for you a connection that you would like to make. (Ex: **SiteBtoA**). Click the **Add** button.

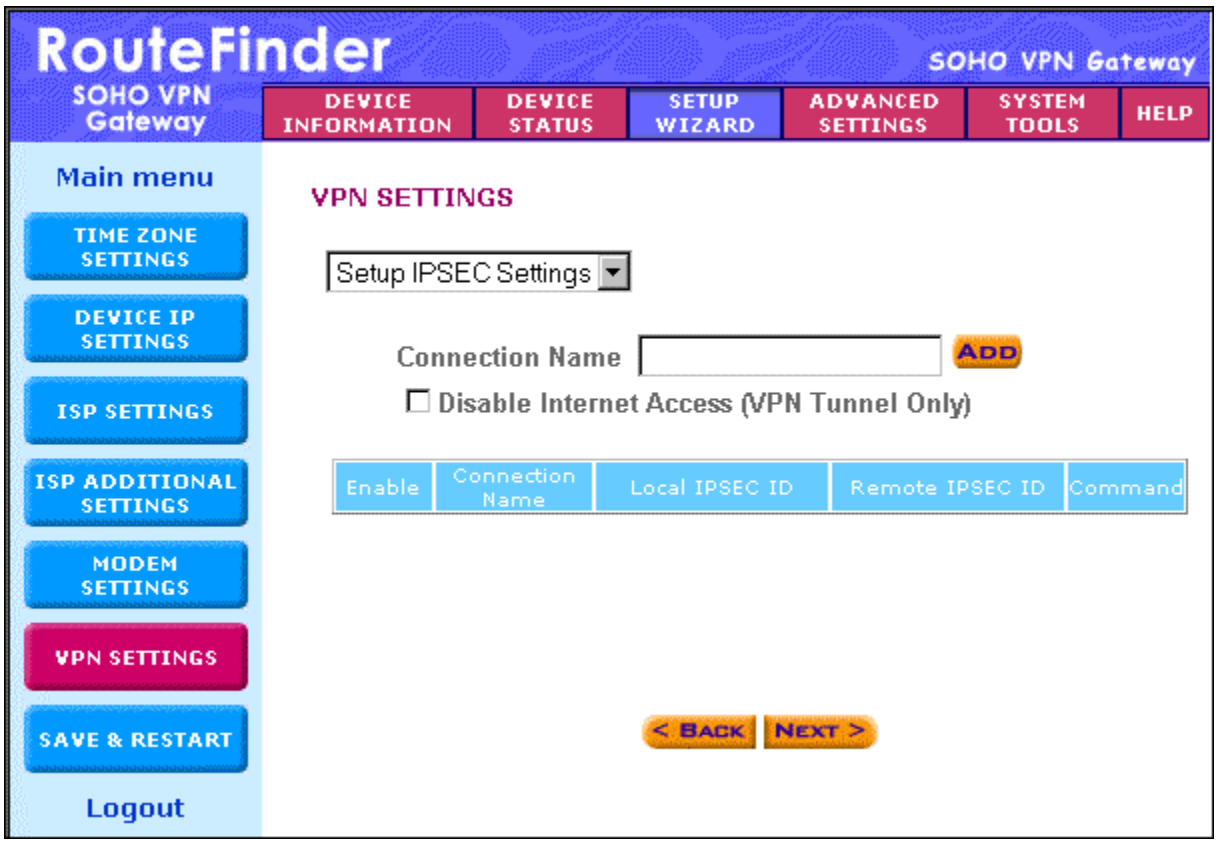


For the RF560VPN:

From the **VPN Settings** drop-down list box, select the type of VPN Connection you want to set:



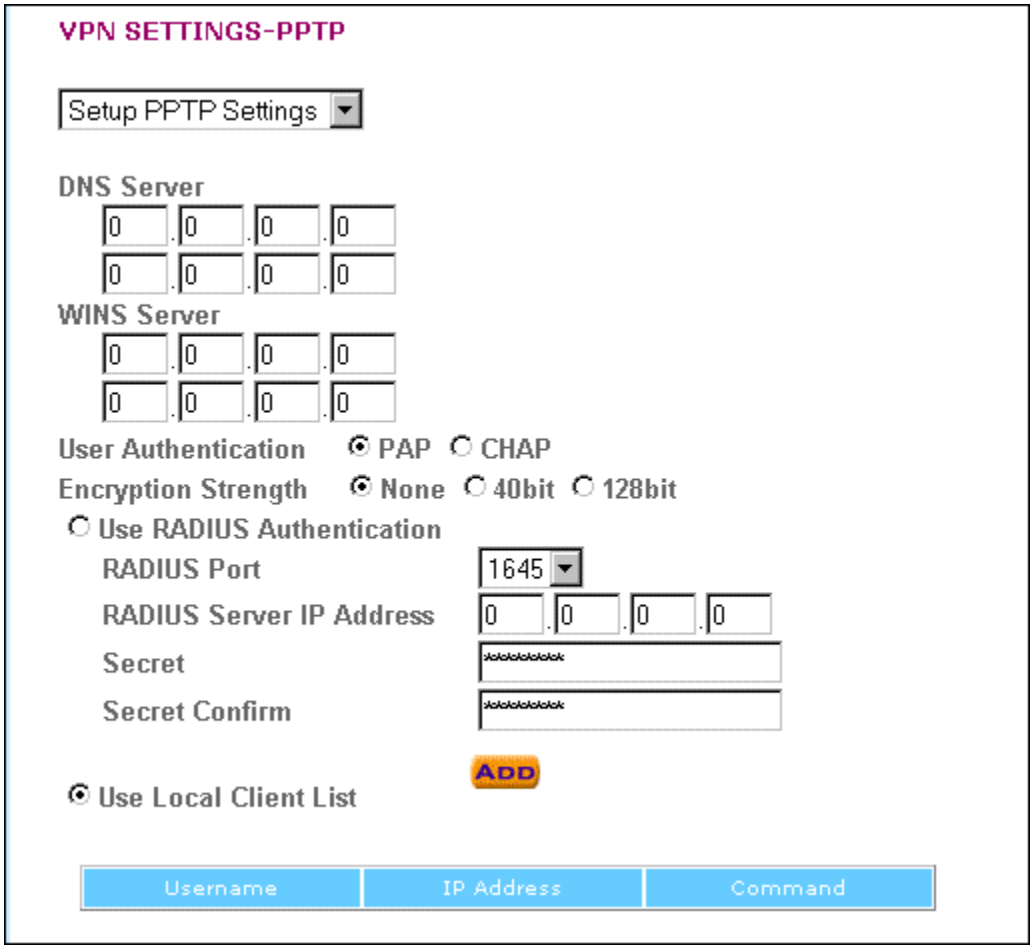
If you select Setup IPSEC Settings, the following screen displays:



- In the **Connection Name** field, type a name that describes a connection you would like to make.
- Example: **Site A**.
- Click the **Add** button, and the **VPN Settings** detail screen will display (see the next screen). Once you have entered the settings, the **Connection Name** displays on the lower half of the screen (above).
- Click the checkbox if you want to **Disable Internet Access (VPN Tunnel Only).**
- You can then edit, delete, or enable/disable this connection by clicking the corresponding buttons.
- To enable this connection, check the **Enable** box.

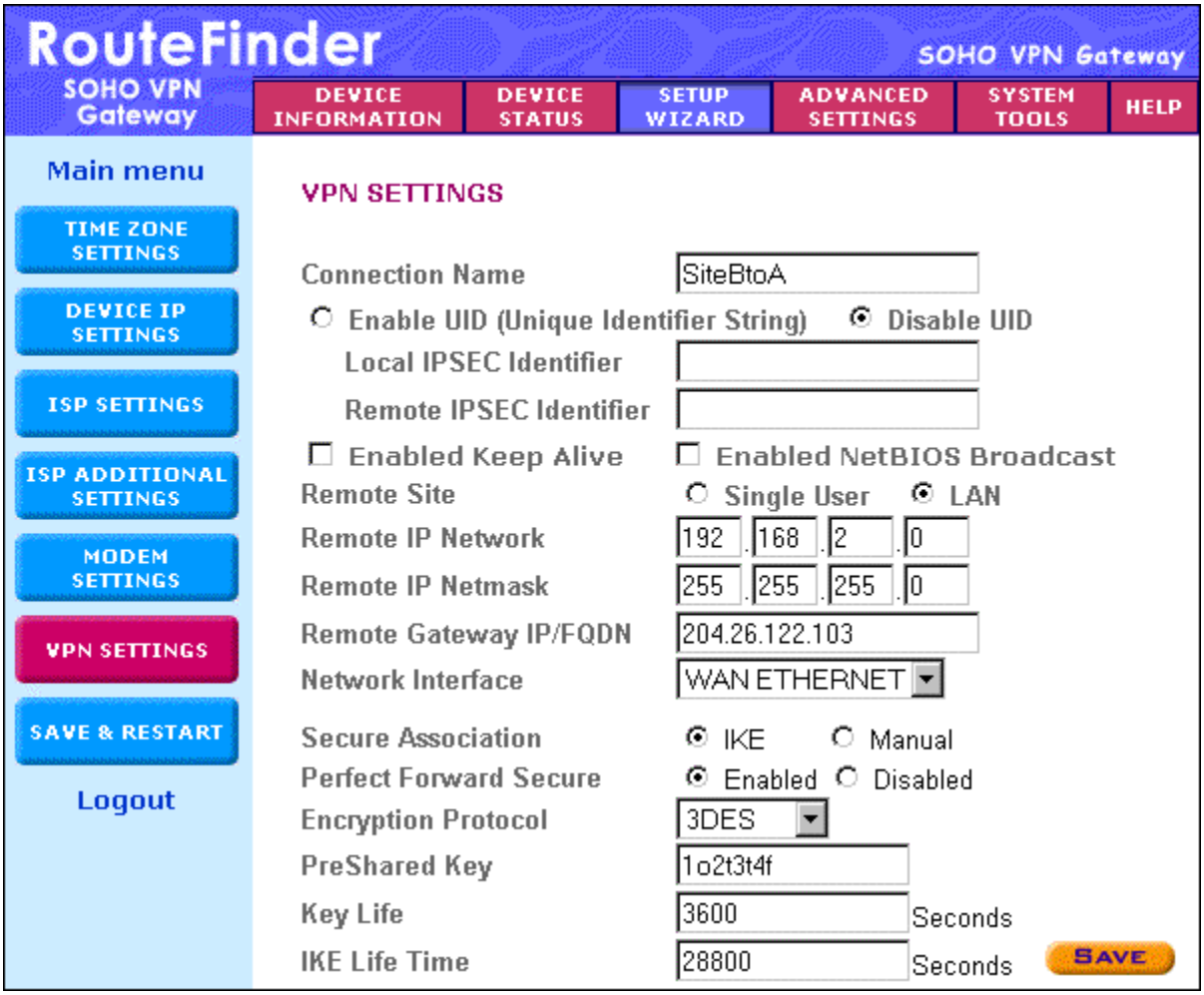
Note: If you uncheck the **Enable** box, the connection will not be active, but the parameters will remain on the screen for you to enable, edit, or delete as desired.

If you select Setup PPTP Settings, the following screen displays:



- **DNS Server** – Enter the address of the DNS Server to be used.
- **WINS Server** – Enter the address of WINS Server to be used.
- **User Authentication** – Select the User Authentication method to be used.
- **Encryption Strength** – Select the Encryption Strength desired.
- **Use RADIUS Authentication:**
  Check the Use RADIUS Authentication button to enable RADIUS. Then the following information:
  - **RADIUS Port** – Select the port number.
  - **RADIUS Server IP Address** – Enter the RADIUS Server IP Address.
  - **Secret** – Enter a secret password.
  - **Secret Confirm** – Retype the secret password for verification.
- **Use Local Client List** – Check this radio button to have your local client list used by the program.

14. The **VPN Settings** screen for entering specific VPN settings will display. The screen pictured below assumes **IKE** is selected as the **Secure Association**. The **Connection Name** (**SiteBtoA**) defaults into the first field. Two configuration choices documented for Secure Association: IKE and **Manual**:



a) Select **Disable UID** and leave **Local IPSec Identifier** and **Remote IPSec Identifier** blank.

b) Do **not** check **Enabled Keep Alive**.

c) Do **not** check **Enabled NetBIOS Broadcast**.

d) **Remote Site –** Select **LAN.**

e) **Remote IP Network –** Enter the **Remote IP Network** address (**LAN**) for Site A. (Ex: **192.168.2.0**)

f) **Remote IP Netmask –** Enter the **Remote IP Netmask** address for Site A. (Ex: **255.255.255.0**)

g) **Remote Gateway IP –** Enter the **Remote Gateway IP** address (**WAN**) for Site A. (Ex: **204.26.122.103**)

h) **Network Interface –** Select the **Network Interface** from the drop-down list box. (Ex: **WAN Ethernet**)

i) **Secure Association –** Select **IKE** to set how inbound packets will be filtered. **IKE** is the default. **IKE** primarily encompasses router key exchange and the negotiation of security policy. Selecting **IKE** displays the following fields.

j) **Perfect Forward Secure –** Check the **Enabled** button.

k) **Encryption Protocol** – Select the encryption protocol used for your configuration. The default protocol for the RF550VPN/RF560VPN communicating with another RF550VPN/RF560VPN is **3DES**. (Ex: **3DES**)

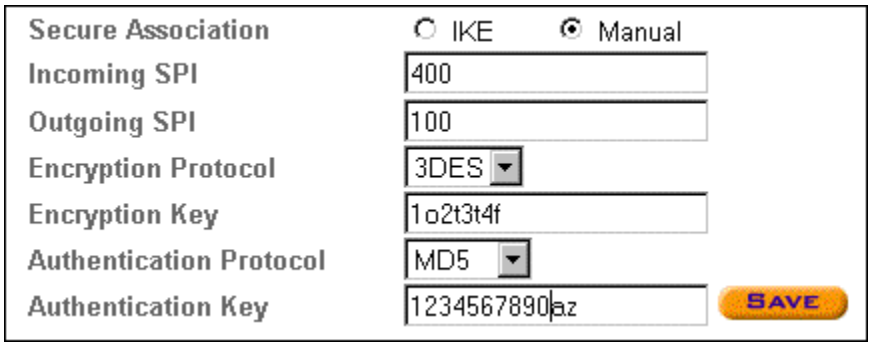
l) **PreShared Key –** Enter the **PreShared Key** name (you can enter an alphanumeric name but it needs to match the security code for the RouteFinder at Site A. (Ex: 1o2t3t4f).

m) **Key Life –** Enter the amount of time that tells the router to renegotiate the Key. For example, 3600 seconds is 60 minutes.

n) **IKE Life Time –** Enter the amount of time that tells the router to renegotiate the IKE security association. For example, 28800 seconds is 8 hours.

14b. The **VPN Settings** screen for entering specific VPN settings will display. The screen pictured below assumes **Manual** is selected as the **Secure Association**. The **Connection Name** (**SiteBtoA**) defaults into the first field. Continue to enter the following settings:

Note: If **Secure Association** is set to **Manual**, the two RF550VPN/RF560VPNs must communicate with Static IP addresses at both ends.



Note: Enter all data for **a)** through **h)** as illustrated above. Then

i) **Secure Association –** Selecting **Manual** instead of IKE will set how inbound packets will be filtered. Selecting **Manual** displays the following fields

j) **Incoming SPI** – Enter the incoming SPI that the remote VPN at Site B will use to identify this Security Association. Enter a three-digit number between 100 and 400. This value must match the outgoing SPI value entered at the remote VPN gateway at Site A. (Ex: 100)

k) **Outgoing SPI** – Enter the outgoing SPI that the Site B VPN gateway will use to identify this Security Association. Enter a three-digit number between 100 and 400. This value must match the incoming SPI value entered at the remote VPN gateway at Site A. (Ex: 400)

l) **Encryption Protocol** – Select an appropriate encryption algorithm: **Null, DES, 3DES**. **3DES** is the recommended choice.

m) **Encryption Key –** Enter a string of characters to be used to encrypt and decrypt transmitted data between the two VPNs. The string is made up of 8-16 alphanumeric characters and needs to match the **Encryption Key** for the RouteFinder at Site A. (Ex: 1o2t3t4f)

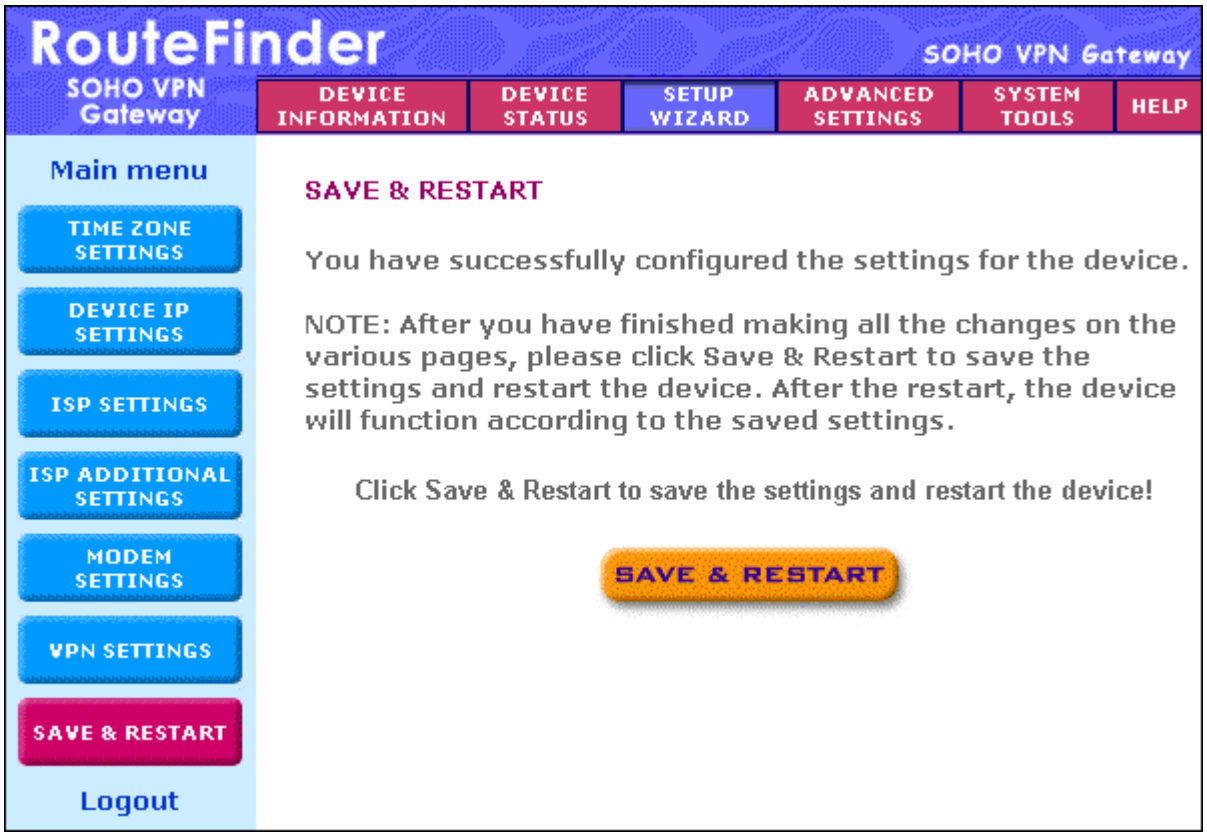
n) **Authentication Protocol** – Select an appropriate authentication algorithm: **MD5** or **SHA-1. MD5** is the recommended choice.

o) **Authentication Key –** Enter a string of characters to be used as a key for authentication between the two VPNs. The string is similar to a password and is made up of 8-16 alphanumeric characters and needs to match the **Authentication Key** for the VPN at Site A. (Ex: 1234567890az)

15. Once the VPN settings are entered, click on the **Save** button, the **Connection Name** will display on the lower half of the screen and on the initial VPN Settings screen. You can enable/disable, edit, or delete this connection by clicking the corresponding buttons. To enable this connection, check the **Enable** box that appears to the left of the connection name.

Note: If you uncheck the **Enable** box, the parameters will remain in the table for you to enable/disable, edit, or delete at any time.

16. After you have finished making all the changes on the various pages, click **Save and Restart** to save the settings and restart the device**.** After the restart, the device will function according to the saved settings.


RouteFinder
SOHO VPN Gateway
SOHO VPN Gateway
DEVICE INFORMATION
DEVICE STATUS
SETUP WIZARD
ADVANCED SETTINGS
SYSTEM TOOLS
HELP
Main menu
TIME ZONE SETTINGS
DEVICE IP SETTINGS
ISP SETTINGS
ISP ADDITIONAL SETTINGS
MODEM SETTINGS
VPN SETTINGS
SAVE & RESTART
Logout
SAVE & RESTART
You have successfully configured the settings for the device.
NOTE: After you have finished making all the changes on the various pages, please click Save & Restart to save the settings and restart the device. After the restart, the device will function according to the saved settings.
Click Save & Restart to save the settings and restart the device!
SAVE & RESTART

During the save and restart process, system messages will let you know that you have successfully configured the settings for the device and saved the settings. You will see a status bar across the bottom of your browser showing the progress of the startup process. The RouteFinder home page will be loaded automatically after restart is completed.

This completes the configuration of the RF550VPN/RF560VPN at Site B.

Testing Your Configuration

You can test your connection between the two RouteFinders using the PING command at a DOS prompt.

1. At the Site A workstation connected to a LAN port of the RF550VPN/RF560VPN:

   a) At the DOS prompt PING a workstation connected to the LAN port of the RF550VPN/RF560VPN at Site B.

   Example: PING 192.168.10.100 <return>

   You should see four successful packet transmit/receive statements. If you do not, try several more times. You may see several initial failures while the two RouteFinders make a secure connection.

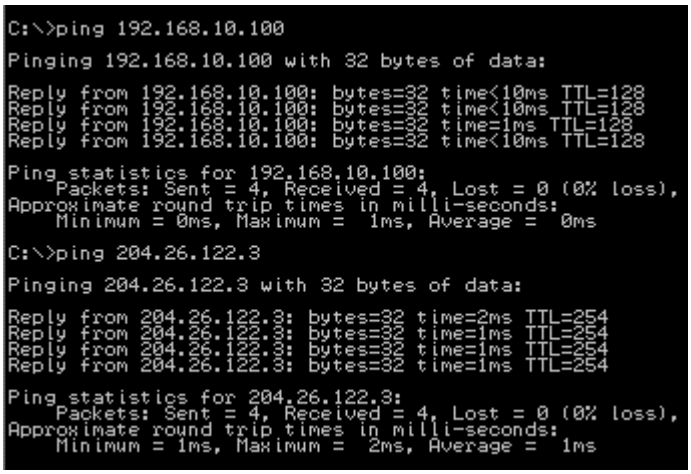
   b) If this fails, try to PING the WAN port of the RF550VPN/RF560VPN at Site B.

   Example: PING 204.26.122.3

   You should see four successful packet transmit/receive statements. If you do not, try several more times. You may see several initial failures while the two RouteFinders make a secure connection.

   c) If this fails, try to PING the WAN port of the RF550VPN/RF560VPN at Site A.
   Example: PING 204.26.122.103

   Note: If any of these tests fail then verify that the workstation is connected to the LAN port of the RF550VPN/RF560VPN. The LAN port LINK LED should be on and the ACT LED should blink on each time you PING the RF550VPN/RF560VPN. Verify the WAN port at each Site is connected properly. Also verify that the RF550VPN/RF560VPN is configured properly.



2. At the Site B workstation connected to a LAN port of the RF550VPN/RF560VPN:

   a) At the DOS prompt PING a workstation connected to the LAN port of the RF550VPN/RF560VPN at Site A.

      Example: PING 192.168.2.100 <return>

      You should see four successful packet transmit/receive statements. If you do not, try several more times. You may see several initial failures while the two RouteFinders make a secure connection.

   b) If this fails, try to PING the WAN port of the RF550VPN/RF560VPN at Site A.

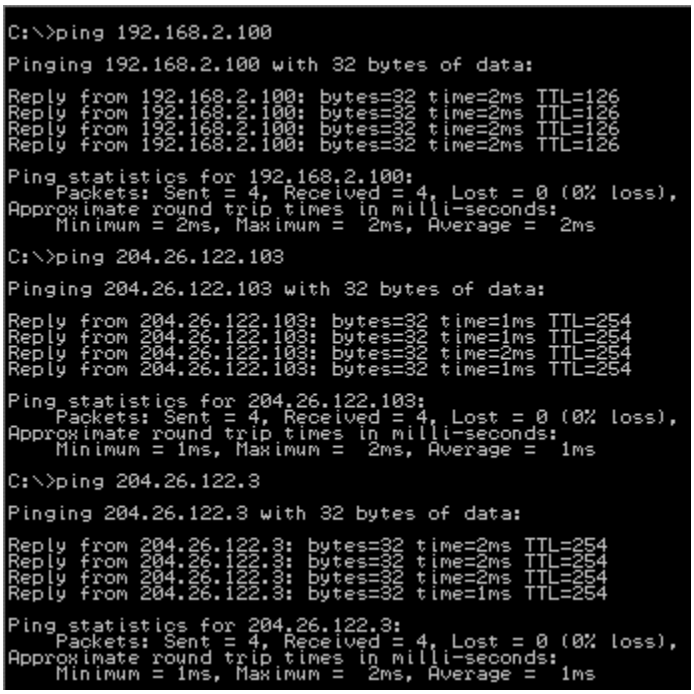
      Example: PING 204.26.122.103

      You should see four successful packet transmit/receive statements. If you do not, try several more times. You may see several initial failures while the two RouteFinders make a secure connection.

   c) If this fails, try to PING the WAN port of the RF550VPN/RF560VPN at Site B.

      Example: PING 204.26.122.3

   Note: If any of these tests fail then verify that the workstation is connected to a LAN port of the RF550VPN/RF560VPN. The LAN port LINK LED should be on and the ACT LED should blink on each time you PING the RF550VPN/RF560VPN. Verify the WAN port at each Site is connected properly. Also verify that the RF550VPN/RF560VPN is configured properly.

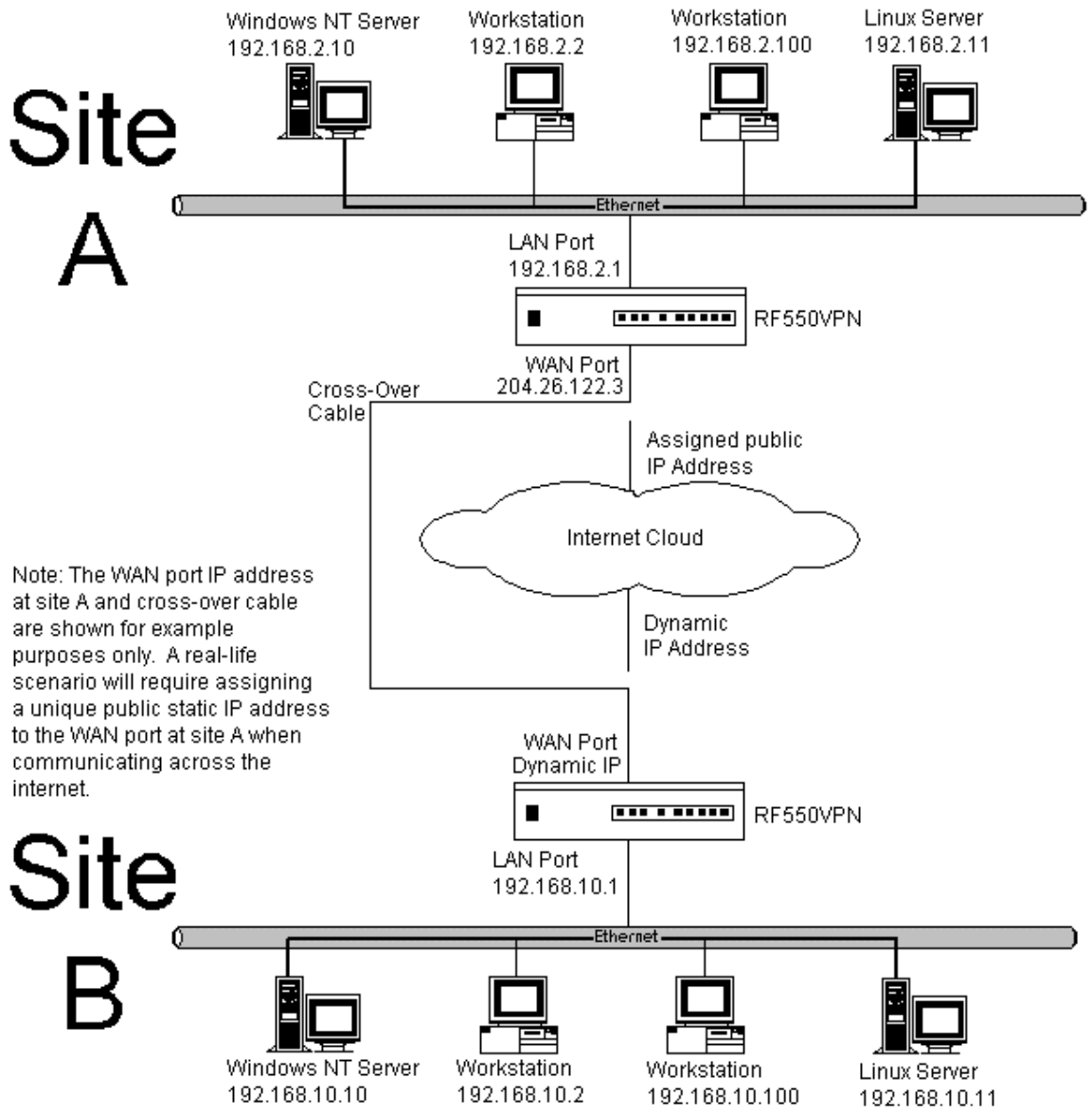

C:\>ping 192.168.2.100
Pinging 192.168.2.100 with 32 bytes of data:
Reply from 192.168.2.100: bytes=32 time=2ms TTL=126
Reply from 192.168.2.100: bytes=32 time=2ms TTL=126
Reply from 192.168.2.100: bytes=32 time=2ms TTL=126
Reply from 192.168.2.100: bytes=32 time=2ms TTL=126
Ping statistics for 192.168.2.100:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 2ms, Average = 2ms
C:\>ping 204.26.122.103
Pinging 204.26.122.103 with 32 bytes of data:
Reply from 204.26.122.103: bytes=32 time=1ms TTL=254
Reply from 204.26.122.103: bytes=32 time=1ms TTL=254
Reply from 204.26.122.103: bytes=32 time=2ms TTL=254
Reply from 204.26.122.103: bytes=32 time=1ms TTL=254
Ping statistics for 204.26.122.103:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 2ms, Average = 1ms
C:\>ping 204.26.122.3
Pinging 204.26.122.3 with 32 bytes of data:
Reply from 204.26.122.3: bytes=32 time=2ms TTL=254
Reply from 204.26.122.3: bytes=32 time=2ms TTL=254
Reply from 204.26.122.3: bytes=32 time=2ms TTL=254
Reply from 204.26.122.3: bytes=32 time=1ms TTL=254
Ping statistics for 204.26.122.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 2ms, Average = 1ms

Example 2

This example provides a sample RouteFinder configuration and related address scheme for an application employing LAN-to-LAN IPSec VPN communication. This is an example on how to configure an RF550VPN/RF560VPN at Site A and an RF550VPN/RF560VPN at Site B so Site A and B can communicate through a connection over the Internet. This example is similar to example 1 but assumes the RF550VPN/RF560VPN at Site A is using a VPN gateway (WAN port) with a fixed static IP address and the RF550VPN/RF560VPN at Site B is using a VPN gateway (WAN port) with a dynamic IP address.

LAN-to-LAN Static/Dynamic WAN IP Configuration Diagram:

Note: The illustration labels the RouteFinder as the RF550VPN, but it stands for the RF560VPN also.



Example 2: LAN-to-LAN Configuration Chart

LAN-to-LAN Application – Site A: RF550VPN/RF560VPN-Static	LAN-to-LAN Application – Site B: RF550VPN/RF560VPN-Dynamic
1. Domain name = Site-A.com	1. Domain name = Site-B.com
2. Public Class C = 204.26.122.x	2. Public Class C = 204.26.122.x
3. SETUP WIZARD > DEVICE IP SETTINGS IP Address: 192.168.2.1 IP Subnet Mask: 255.255.255.0	3. SETUP WIZARD > DEVICE IP SETTINGS IP Address: 192.168.10.1 IP Subnet Mask: 255.255.255.0
4. SETUP WIZARD > ISP SETTINGS Select 'Static IP Settings' IP assigned by your ISP: 204.26.122.103 IP Subnet Mask: 255.255.255.0 ISP Gateway Address: 204.26.122.3	4. SETUP WIZARD > ISP SETTINGS Select 'Static IP Settings' IP assigned by your ISP: 0.0.0.0 IP Subnet Mask: 0.0.0.0 ISP Gateway Address: 0.0.0.0
5. SETUP WIZARD > VPN SETTINGS Connection Name = SiteAtoB Disable (do not check) 'Enable UID' Disable (do not check) 'Keep Alive' Disable (do not check) 'NetBIOS Broadcast' Remote Site = LAN Remote IP Network = 192.168.10.0 Remote IP Netmask = 255.255.255.0 Remote Gateway IP = 0.0.0.0 Network Interface = WAN ETHERNET Secure Association = check IKE Perfect Forward Secure = check enabled Encryption Protocol = select 3DES Preshared Key = (must match key code at Site B) Key Life = set to default IKE Life Time = set to default	5. SETUP WIZARD > VPN SETTINGS Connection Name = SiteBtoA Disable (do not check) 'Enable UID' Disable (do not check) 'Keep Alive' Disable (do not check) 'NetBIOS Broadcast' Remote Site = LAN Remote IP Network = 192.168.2.0 Remote IP Netmask = 255.255.255.0 Remote Gateway IP = 204.26.122.103 Network Interface = WAN ETHERNET Secure Association = check IKE Perfect Forward Secure = check enabled Encryption Protocol = select 3DES Preshared Key = (must match key code at Site A) Key Life = set to default IKE Life Time = set to default

Address Table

Enter the configuration information (e.g., the Default Gateway and other IP addresses used) into the appropriate field of the Address Table below. Please print this page and use it to fill in your specific RouteFinder information and keep for future reference. (Example information below is shown to match the configuration diagram.)

	IP Address	Net Mask	Default Gateway
Network Port connected to the internal network (LAN on eth0) Site A	___.___.___.___ 192.168.2.1	___.___.___.___ 255.255.255.0	
Network Port connected to the external network (WAN on eth1) Site A	___.___.___.___ 204.26.122.103	___.___.___.___ 255.255.255.0	___.___.___.___ 204.26.122.1
Network Port connected to the internal network (LAN) on Site B	___.___.___.___ 192.168.10.1	___.___.___.___ 255.255.255.0	
Network Port connected to the external network (WAN) on Site B	___.___.___.___ Dynamic	___.___.___.___ 255.255.255.0	___.___.___.___ 204.26.122.1

LAN-to-LAN Application – Site A: RF550VPN/RF560VPN-Static

1. Domain name = _____

2. Public Class C = ___.___.___.X

3. SETUP WIZARD > DEVICE IP SETTINGS
   IP Address: ___.___.___.___
   IP Subnet Mask: ___.___.___.___

4. SETUP WIZARD > ISP SETTINGS
   IP assigned by your ISP: ___.___.___.___
   IP Subnet Mask: 255.255.255.___
   ISP Gateway Address: ___.___.___.___

5. SETUP WIZARD > VPN SETTINGS
   Remote IP Network = ___.___.___.0
   Remote IP Netmask = 255.255.255.0
   Remote Gateway IP = 0.0.0.0

LAN-to-LAN Application – Site B: RF550VPN/RF560VPN-Dynamic

1. Domain name = _____

2. Public Class C = ___.___.___.X

3. SETUP WIZARD > DEVICE IP SETTINGS
   IP Address: ___.___.___.___
   IP Subnet Mask: ___.___.___.___

4. SETUP WIZARD > ISP SETTINGS
   IP assigned by your ISP: ___.___.___.___
   IP Subnet Mask: 255.255.255.___
   ISP Gateway Address: ___.___.___.___

5. SETUP WIZARD > VPN SETTINGS
   Remote IP Network = ___.___.___.0
   Remote IP Netmask = 255.255.255.0
   Remote Gateway IP = ___.___.___.___

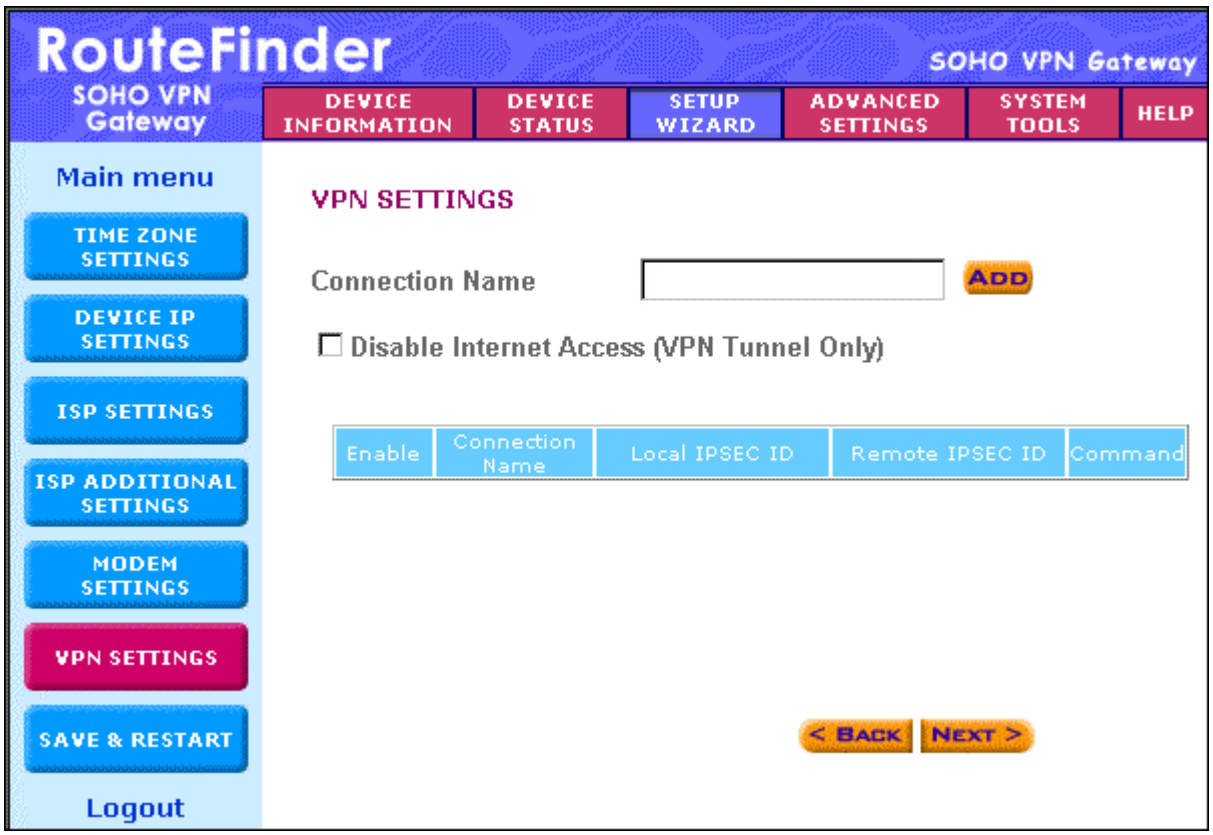
Software Configuration

Example 2: Configuration Procedure at Site A

Note: To configure the RF550VPN/RF560VPN at Site A follow the same procedure as in example 1, **but change the following items in the RF550VPN/RF560VPN configuration:**

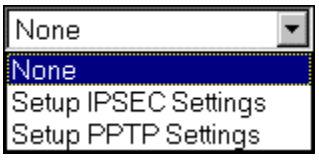
1. Click the button on the left side of the screen for **VPN Settings**. Use this screen to setup your LAN-to-LAN VPN connection.

2. **For the RF550VPN:** In the **Connection Name** field, type a name that identifies for you a connection that you would like to make. (Ex: **SiteAtoB**). Click the **Add** button.

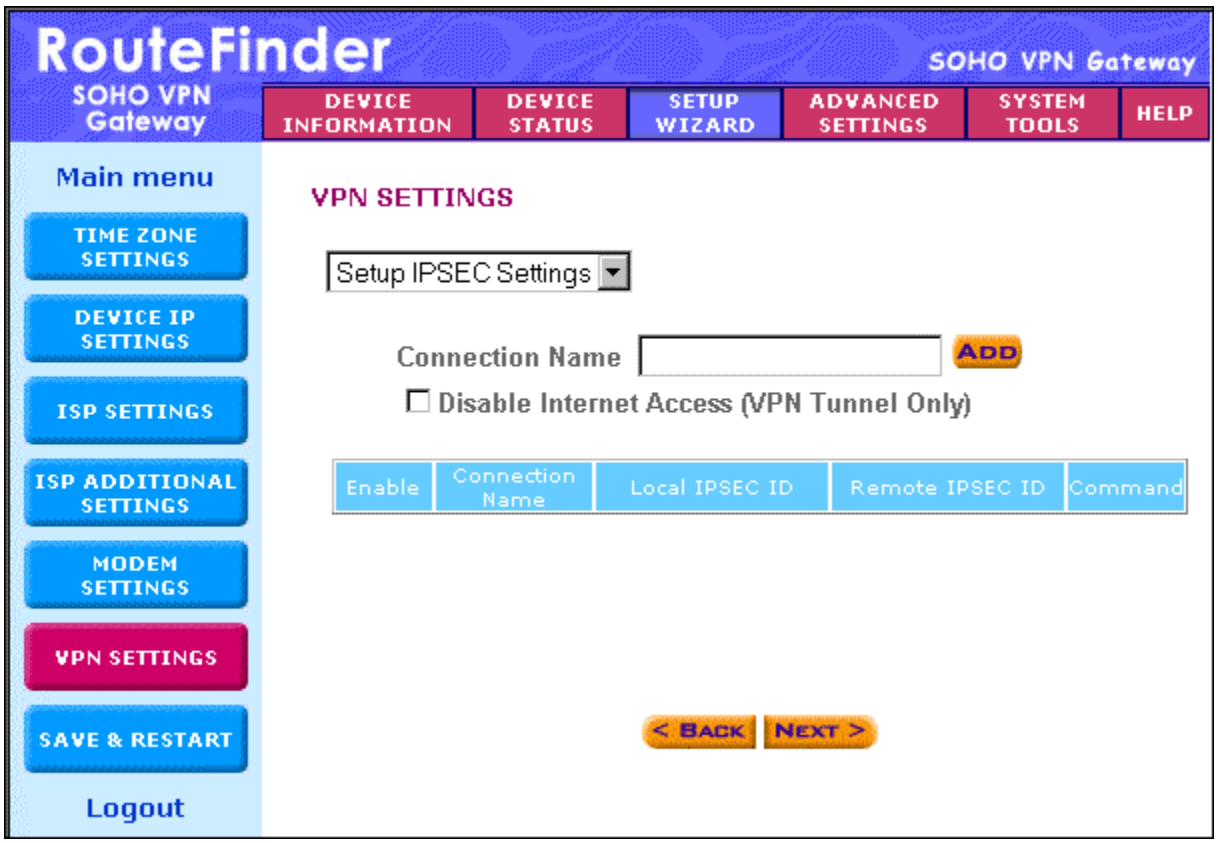


For the RF560VPN:

From the **VPN Settings** drop-down list box, select the type of VPN Connection you want to set:



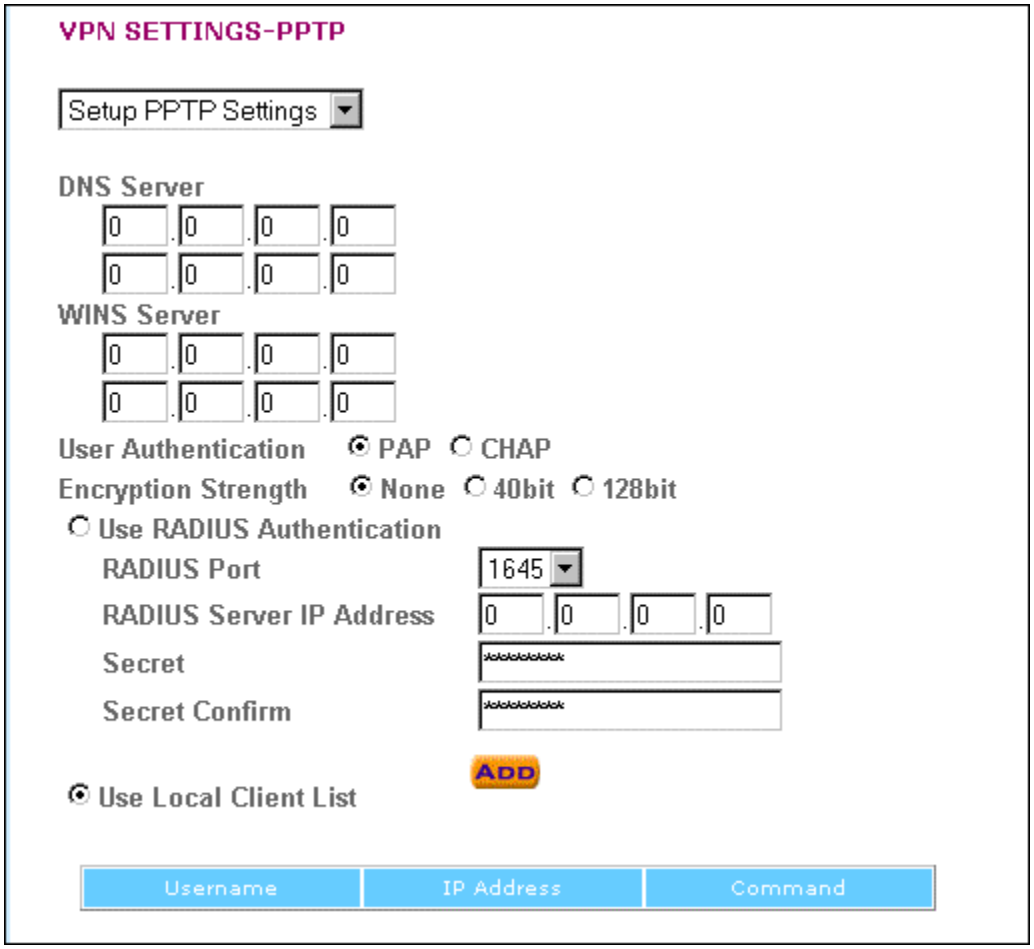
If you select Setup IPSEC Settings, the following screen displays:



- In the **Connection Name** field, type a name that describes a connection you would like to make.
- Example: **Site A**.
- Click the **Add** button, and the **VPN Settings** detail screen will display (see the next screen). Once you have entered the settings, the **Connection Name** displays on the lower half of the screen (above).
- Click the checkbox if you want to **Disable Internet Access (VPN Tunnel Only).**
- You can then edit, delete, or enable/disable this connection by clicking the corresponding buttons.
- To enable this connection, check the **Enable** box.

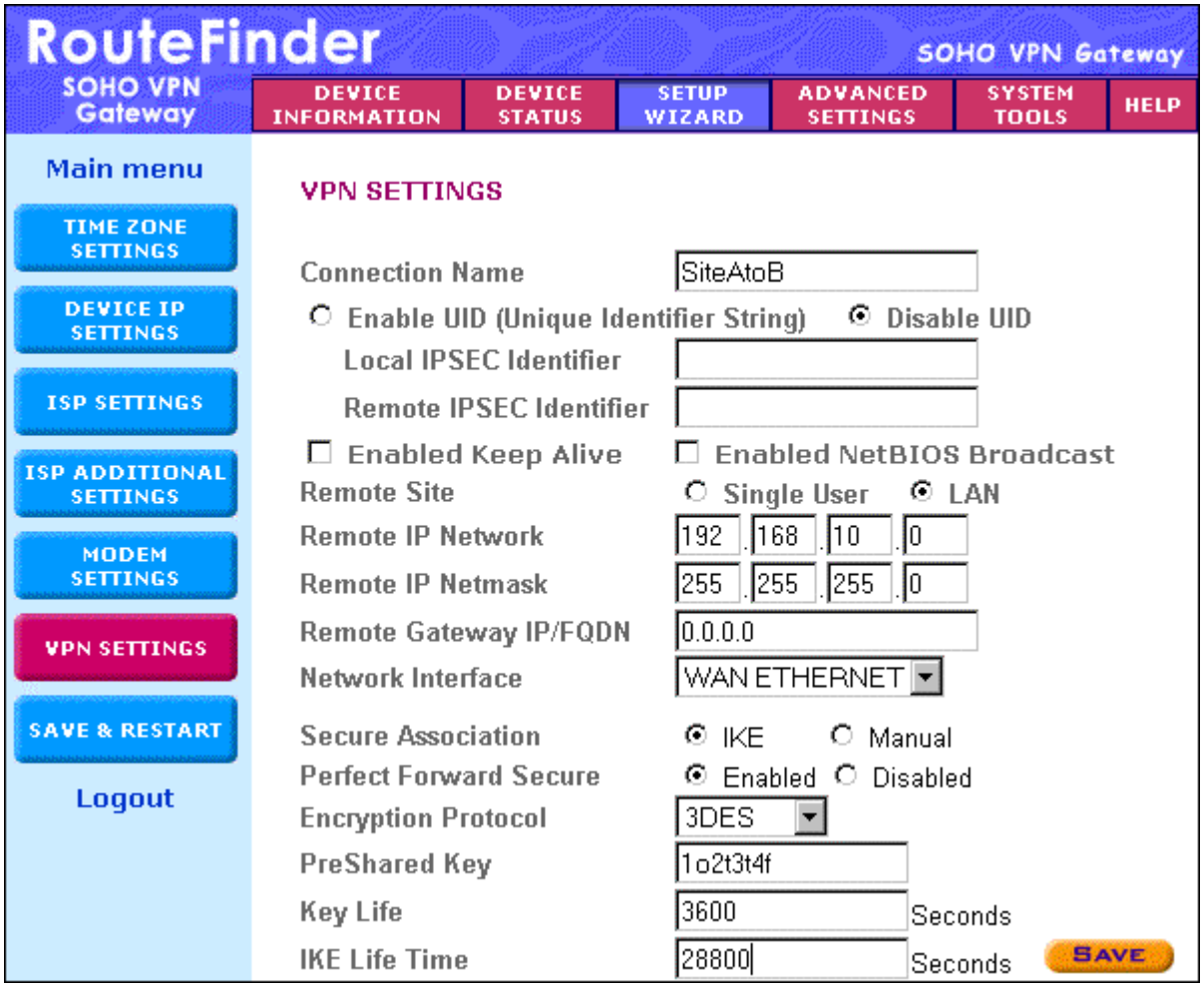
Note: If you uncheck the **Enable** box, the connection will not be active, but the parameters will remain on the screen for you to enable, edit, or delete as desired.

If you select Setup PPTP Settings, the following screen displays:



- **DNS Server** – Enter the address of the DNS Server to be used.
- **WINS Server** – Enter the address of WINS Server to be used.
- **User Authentication** – Select the User Authentication method to be used.
- **Encryption Strength** – Select the Encryption Strength desired.
- **Use RADIUS Authentication:**
  Check the Use RADIUS Authentication button to enable RADIUS. Then the following information:
  - **RADIUS Port** – Select the port number.
  - **RADIUS Server IP Address** – Enter the RADIUS Server IP Address.
  - **Secret** – Enter a secret password.
  - **Secret Confirm** – Retype the secret password for verification.
- **Use Local Client List** – Check this radio button to have your local client list used by the program.

The **VPN Settings** screen for entering specific VPN settings will display. The **Connection Name** (**SiteAtoB**) defaults into the first field. Continue to enter the following settings:



a) Select **Disable UID** and leave **Local IPSec Identifier** and **Remote IPSec Identifier** blank.

b) Do **not** check **Enabled Keep Alive**.

c) Do **not** check **Enabled NetBIOS Broadcast**.

d) **Remote Site –** Select **LAN**.

e) **Remote IP Network –** Enter the **Remote IP Network** address (**LAN**) for Site B. (Ex: **192.168.10.0**)

f) **Remote IP Netmask –** Enter the **Remote IP Netmask** address for Site B. (Ex: **255.255.255.0**)

g) **Remote Gateway IP –** Enter the **Remote Gateway IP** address (**WAN**) for Site B. Since Site B will use dynamic IP addressing, set this value to 0.0.0.0.

h) **Network Interface –** Select the **Network Interface** from the drop-down list box. (Ex: **WAN Ethernet**)

i) **Secure Association –** Select **IKE** to set how inbound packets will be filtered. **IKE** is the default. **IKE** primarily encompasses router key exchange and the negotiation of security policy. Selecting **IKE** displays the following fields.

Note: Since this example is assuming the RF550VPN/RF560VPN at Site B is using a dynamic IP address, the **Secure Association** must be set to **IKE**. Selecting **Manual** mode for the **Secure Association** requires a valid Address to be entered for the Remote Gateway IP. 0.0.0.0 is not a valid IP address.

j) **Perfect Forward Secure –** Check the **Enabled** button.

k) **Encryption Protocol** – Select the encryption protocol used for your configuration. The default protocol for the RF550VPN/RF560VPN communicating with another RF550VPN/RF560VPN is **3DES**. (Ex: **3DES**)

l) **PreShared Key –** Enter the **PreShared Key** name (you can enter an alphanumeric name but it needs to match the security code for the RouteFinder at Site B).

m) **Key Life –** Enter the amount of time that tells the router to renegotiate the Key. For example, 3600 seconds is 60 minutes.

n) **IKE Life Time –** Enter the amount of time that tells the router to renegotiate the IKE security association. For example, 28800 seconds is 8 hours.

3. Once the VPN settings are entered, click on the **Save** button, the **Connection Name** will display on the lower half of the screen. You can edit or delete this connection by clicking the corresponding buttons, or you can enable it. To enable this connection, check the **Enable** box that appears to the left of the connection name.

4. Save your settings and restart the RouteFinder.

This completes the configuration of the RF550VPN/RF560VPN at Site A.

Example 2: Configuration Procedure at Site B

Note: To configure the RF550VPN/RF560VPN at Site B follow the same procedure as in example 1, **but change the following item in the RF550VPN/RF560VPN configuration:**

1. For **ISP Settings,** select **Static IP Settings**.

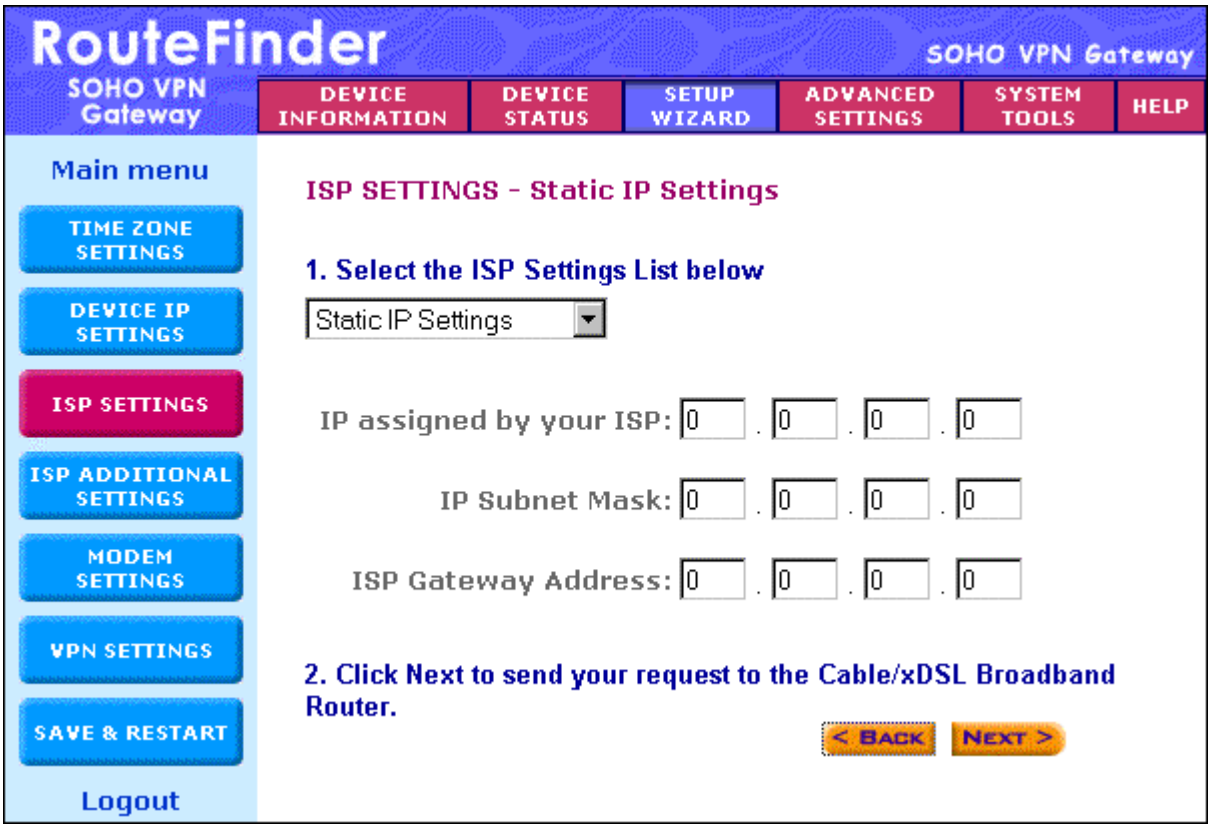
   Note: To test this example with two RF550VPN/RF560VPNs back-to-back **without the Internet**, this box needs to be checked and the following information needs to be entered.

   a) **IP Assigned by your ISP:** This is the IP address of the WAN port on the RF550VPN/RF560VPN at Site B.
   (Ex: 204.26.122.3)

   b) **IP Subnet Mask:** This is the IP address of the subnet mask for the WAN port on the RF550VPN/RF560VPN at Site B. (Ex: 255.255.255.0)

   c) **IP Gateway Address:** This is the IP address of the WAN port on the RF550VPN/RF560VPN at Site A.
   (Ex: 204.26.122.103)

   Click the **Next** button.


RouteFinder
SOHO VPN Gateway
SOHO VPN Gateway
DEVICE INFORMATION
DEVICE STATUS
SETUP WIZARD
ADVANCED SETTINGS
SYSTEM TOOLS
HELP
Main menu
TIME ZONE SETTINGS
DEVICE IP SETTINGS
ISP SETTINGS
ISP ADDITIONAL SETTINGS
MODEM SETTINGS
VPN SETTINGS
SAVE & RESTART
Logout
ISP SETTINGS - Static IP Settings
1. Select the ISP Settings List below
Static IP Settings
IP assigned by your ISP: 0 . 0 . 0 . 0
IP Subnet Mask: 0 . 0 . 0 . 0
ISP Gateway Address: 0 . 0 . 0 . 0
2. Click Next to send your request to the Cable/xDSL Broadband Router.
< BACK
NEXT >

Testing Your Configuration

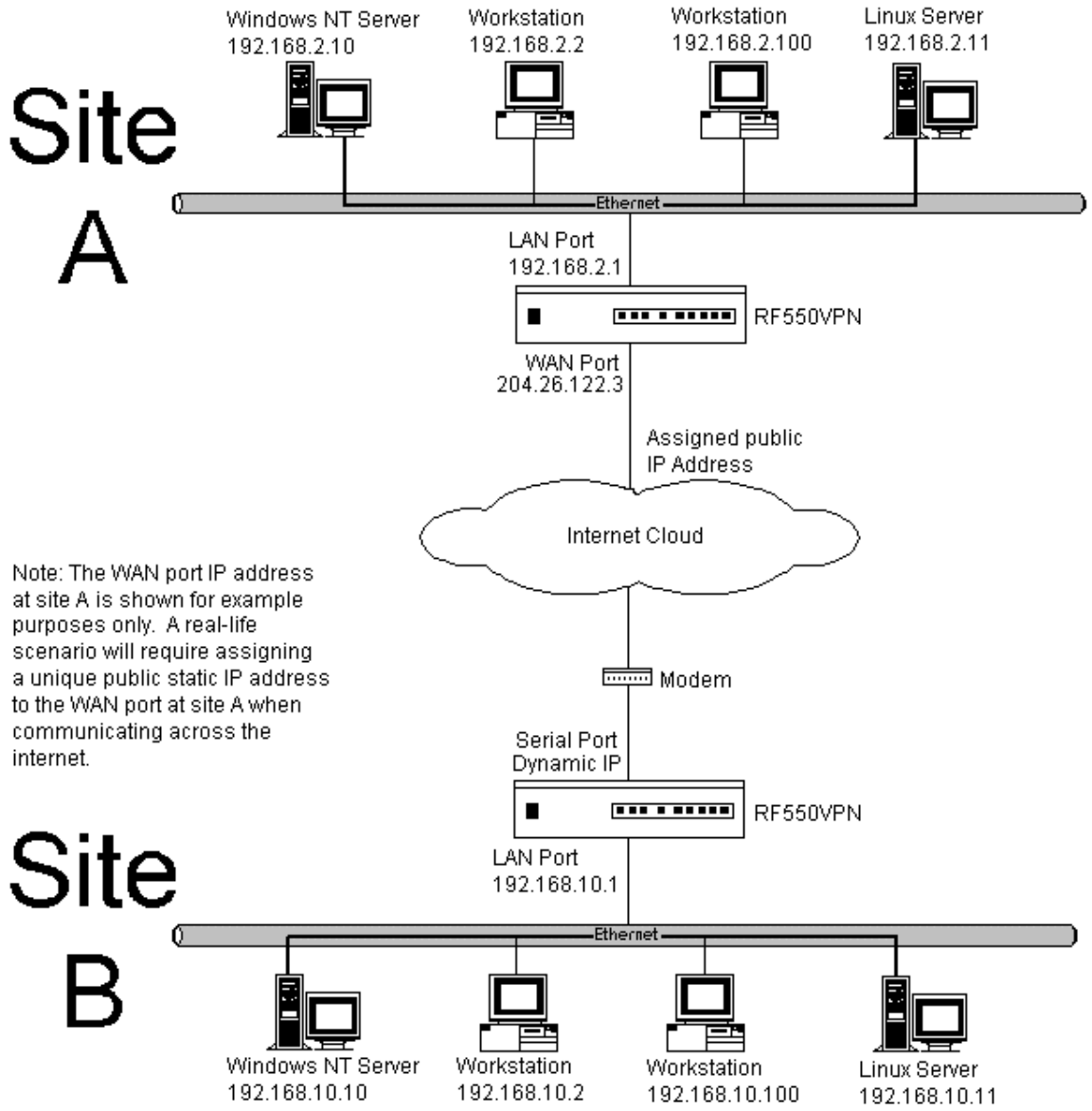
Follow the same procedure as in example 1 using the **PING** command to test your configuration. Since the RF550VPN/RF560VPN is using a dynamic IP at Site B, it will be necessary to initiate a successful PING from Site B to A before PINGing from Site A to B.

Example 3

This example provides a sample RouteFinder configuration and related address scheme for an application employing LAN-to-LAN IPSec VPN communication. This is an example on how to configure an RF550VPN/RF560VPN at Site A and an RF550VPN/RF560VPN at Site B so Site A and B can communicate through a connection over the Internet. This example is the same as example 2 but uses a modem connected to the serial port of the RF550VPN/RF560VPN at Site B for the Internet connection.

LAN-to-LAN Static/Dynamic WAN IP Configuration Diagram with Site B Modem:

Note: The illustration labels the RouteFinder as the RF550VPN, but it stands for the RF560VPN also.



Example 3: LAN-to-LAN Configuration Chart

LAN-to-LAN Application Site A: RF550VPN/RF560VPN-Static	LAN-to-LAN Application Site B: RF550VPN/RF560VPN-Modem
1. Domain name = Site-A.com	1. Domain name = Site-B.com
2. Public Class C = 204.26.122.x	2. Public Class C = 0.0.0.0
3. SETUP WIZARD > DEVICE IP SETTINGS IP Address: 192.168.2.1 IP Subnet Mask: 255.255.255.0	3. SETUP WIZARD > DEVICE IP SETTINGS IP Address: 192.168.10.1 IP Subnet Mask: 255.255.255.0
4. SETUP WIZARD > ISP SETTINGS Select 'Static IP Settings' IP assigned by your ISP: 204.26.122.103 IP Subnet Mask: 255.255.255.0 ISP Gateway Address: 204.26.122.3	4. SETUP WIZARD > ISP SETTINGS Select 'Static IP Settings' IP assigned by your ISP: 0.0.0.0 IP Subnet Mask: 0.0.0.0 ISP Gateway Address: 0.0.0.0
5. SETUP WIZARD > VPN SETTINGS Connection Name = SiteAtoB Disable (do not check) 'Enable UID' Disable (do not check) 'Keep Alive' Disable (do not check) 'NetBIOS Broadcast' Remote Site = LAN Remote IP Network = 192.168.10.0 Remote IP Netmask = 255.255.255.0 Remote Gateway IP = 0.0.0.0 Network Interface = WAN ETHERNET Secure Association = check IKE Perfect Forward Secure = check enabled Encryption Protocol = select 3DES Preshared Key = (must match key code at Site B) Key Life = set to default IKE Life Time = set to default	5. SETUP WIZARD > VPN SETTINGS Connection Name = SiteBtoA Disable (do not check) 'Enable UID' Disable (do not check) 'Keep Alive' Disable (do not check) 'NetBIOS Broadcast' Remote Site = LAN Remote IP Network = 192.168.2.0 Remote IP Netmask = 255.255.255.0 Remote Gateway IP = 204.26.122.103 Network Interface = AUTO Secure Association = check IKE Perfect Forward Secure = check enabled Encryption Protocol = select 3DES Preshared Key = (must match key code at Site A) Key Life = set to default IKE Life Time = set to default

Example 3: Configuration Procedure at Site A

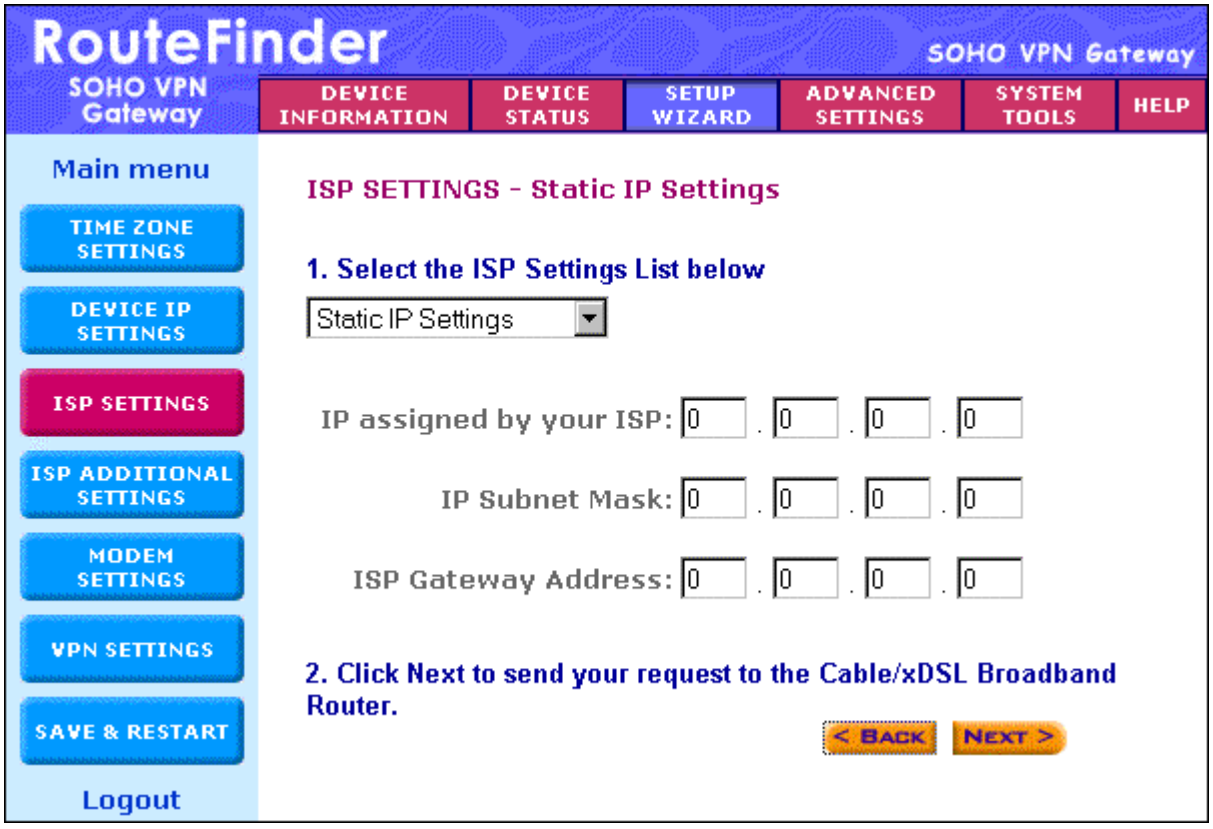
1. To configure the RF550VPN/RF560VPN at Site A follow the same procedure as in Example 2.

Example 3: Configuration Procedure at Site B

Note: Configure the RF550VPN/RF560VPN at Site B same as was explained in example 1, **with the exception of the following changes:**

1. For **ISP Settings** do not check the box **Your ISP requires you to input IP settings** and leave all four IP settings as 0.0.0.0. This is because the serial port and modem will be used instead of the WAN port.

   Click the **Next** button.


RouteFinder
SOHO VPN Gateway
SOHO VPN Gateway
DEVICE INFORMATION
DEVICE STATUS
SETUP WIZARD
ADVANCED SETTINGS
SYSTEM TOOLS
HELP
Main menu
TIME ZONE SETTINGS
DEVICE IP SETTINGS
ISP SETTINGS
ISP ADDITIONAL SETTINGS
MODEM SETTINGS
VPN SETTINGS
SAVE & RESTART
Logout
ISP SETTINGS - Static IP Settings
1. Select the ISP Settings List below
Static IP Settings
IP assigned by your ISP: 0 . 0 . 0 . 0
IP Subnet Mask: 0 . 0 . 0 . 0
ISP Gateway Address: 0 . 0 . 0 . 0
2. Click Next to send your request to the Cable/xDSL Broadband Router.
< BACK
NEXT >

   Note: For this scenario of connecting two RouteFinders back-to-back it is not necessary to enter any information for the **ISP Additional Settings**.

2. Click the button on the left side of the screen for **Modem Settings**. Use this screen to setup your serial port and modem.

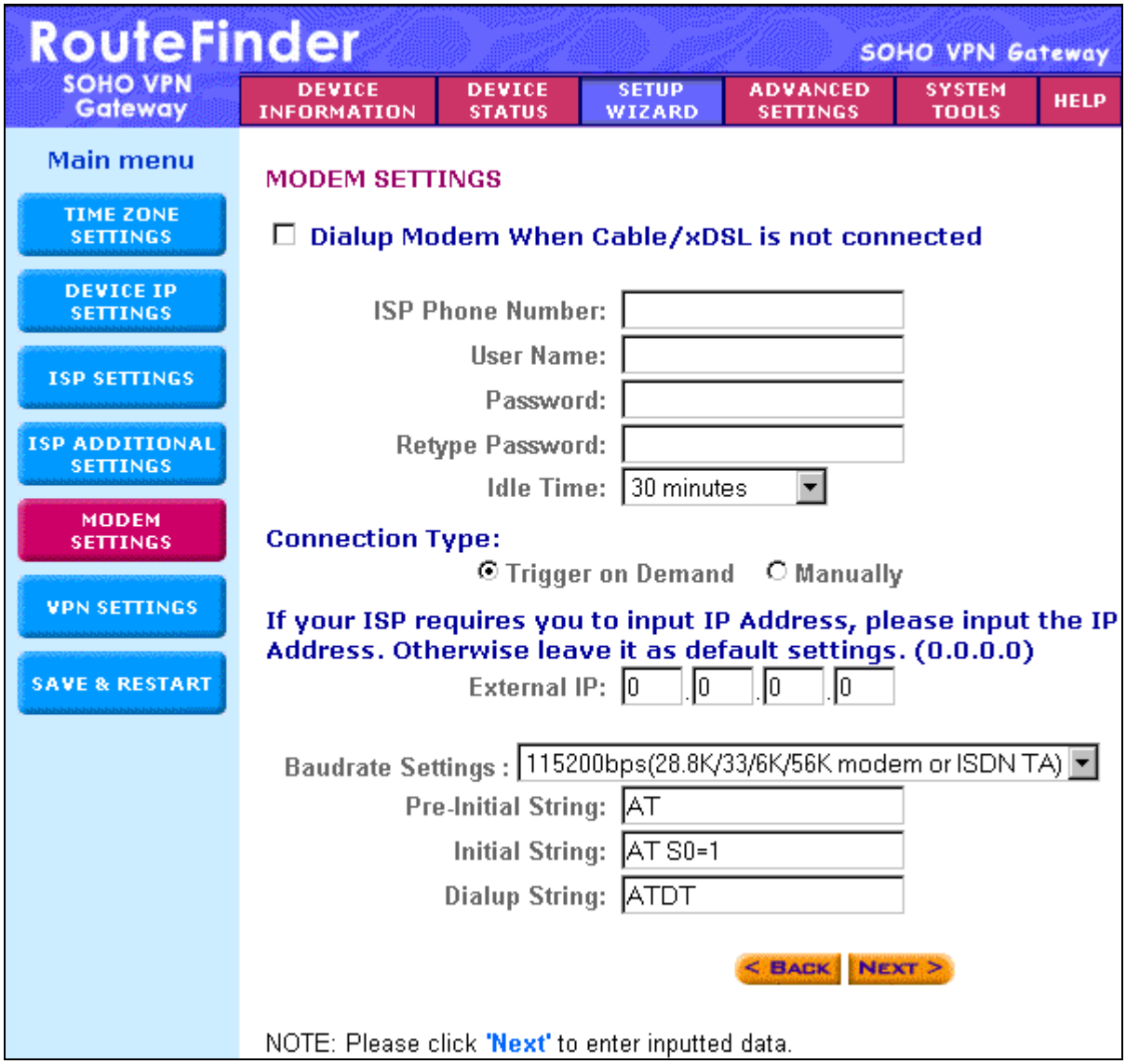
   a) Check the box **Dialup Modem when Cable/xDSL is not Connected**.

   b) Enter the phone number, username and password supplied by your ISP.

   c) Specify an external IP address if required by your ISP.

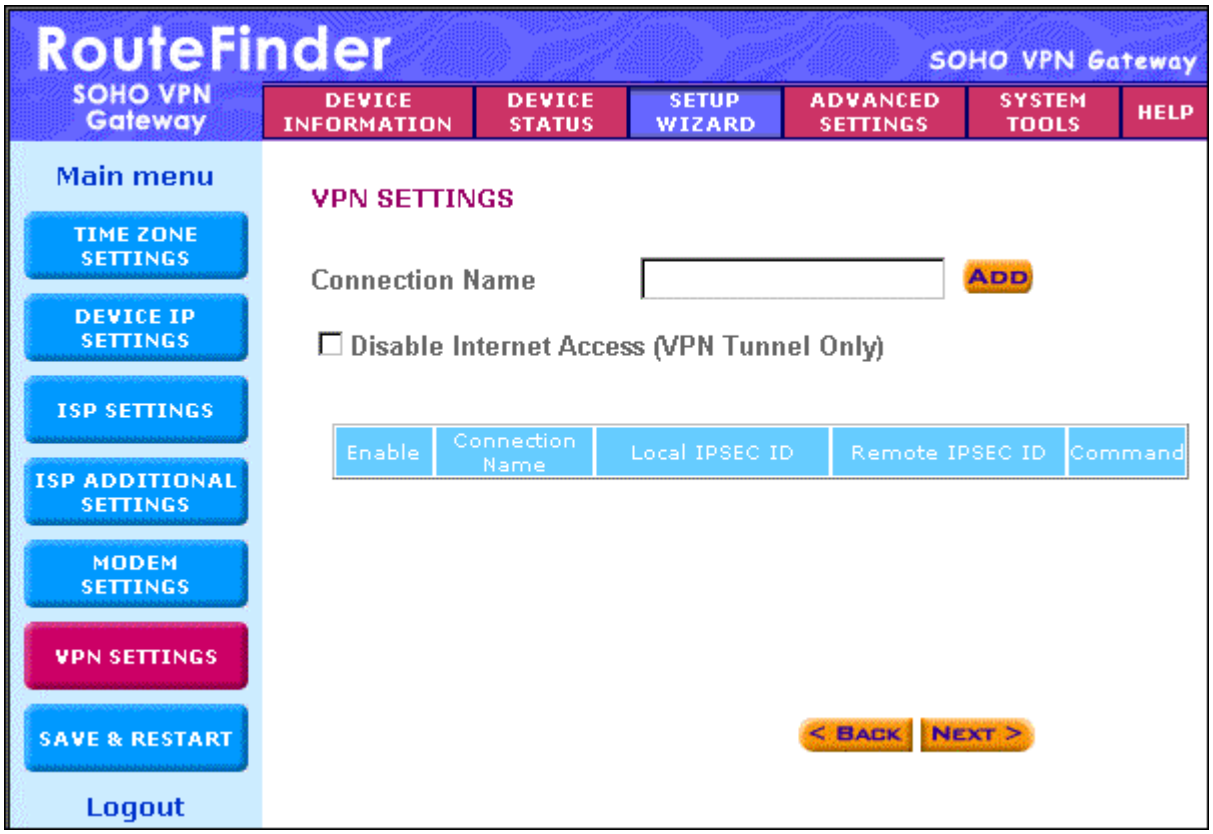
   d) The default modem string settings should be acceptable, if not, make any changes you feel necessary.

   Note: The field **Connect Type** is not available on the RF560VPN



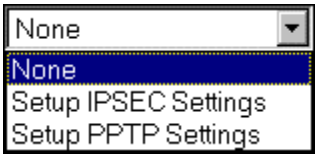
3. Click **Next** to move to the **VPN Settings** screen. Use this screen to setup your LAN-to-LAN VPN connection.

4. **For the RF550VPN:** In the **Connection Name** field, type a name that identifies for you a connection that you would like to make. (Ex: **SiteBtoA**). Click the **Add** button.

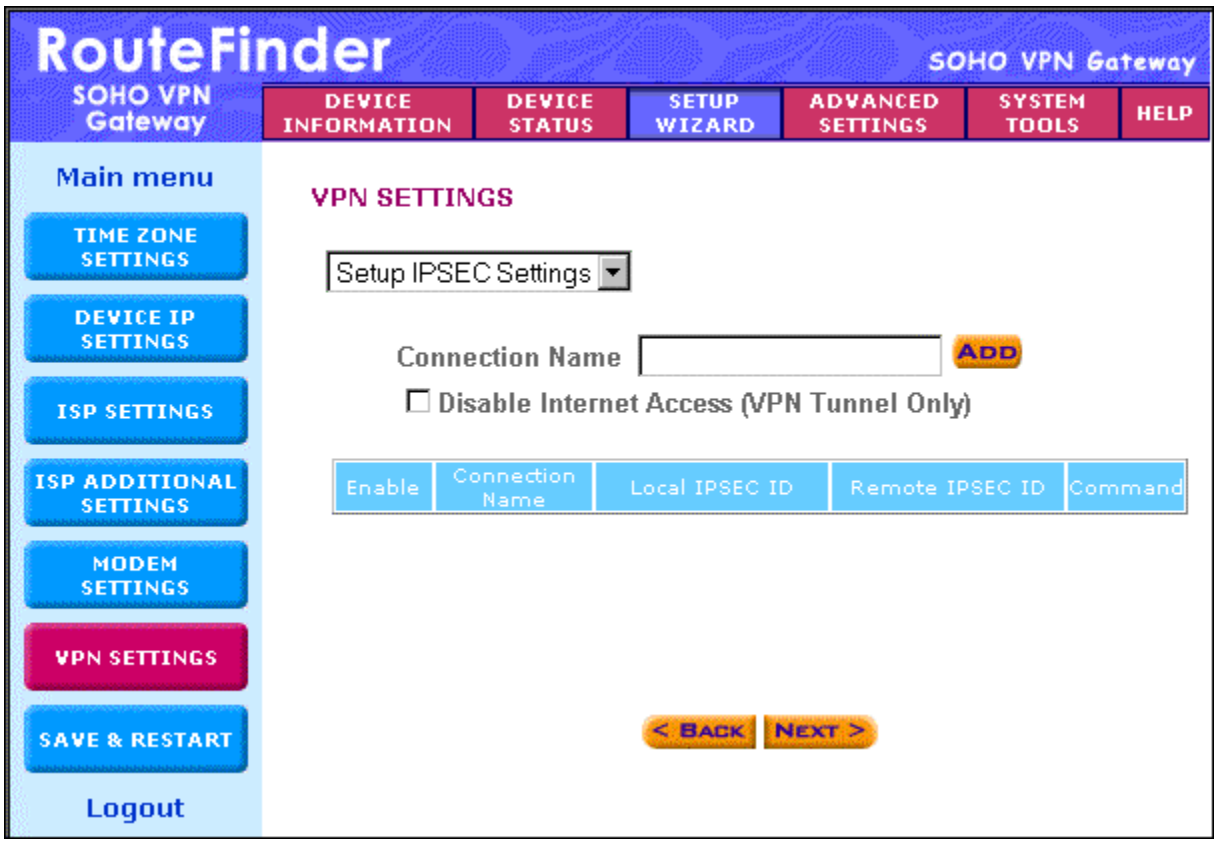


For the RF560VPN:

From the **VPN Settings** drop-down list box, select the type of VPN Connection you want to set:



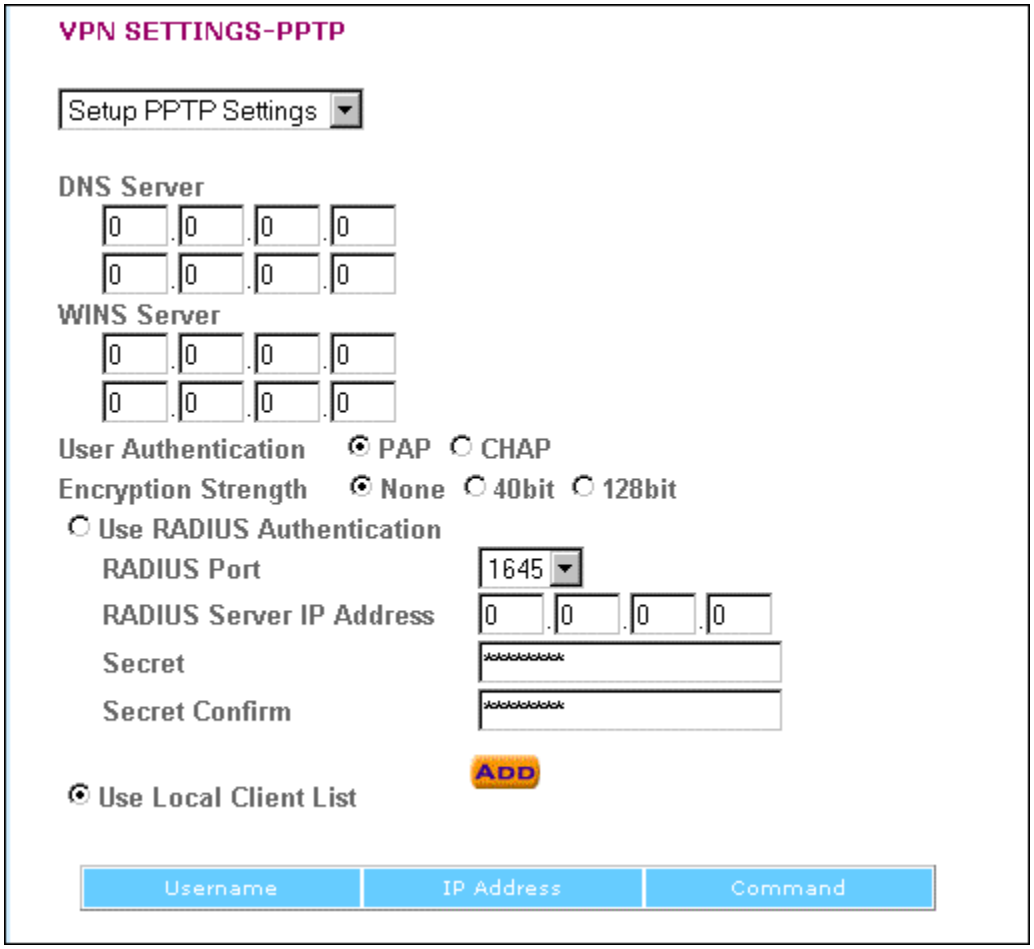
If you select Setup IPSEC Settings, the following screen displays:



- In the **Connection Name** field, type a name that describes a connection you would like to make.
- Example: **Site A**.
- Click the **Add** button, and the **VPN Settings** detail screen will display (see the next screen). Once you have entered the settings, the **Connection Name** displays on the lower half of the screen (above).
- Click the checkbox if you want to **Disable Internet Access (VPN Tunnel Only).**
- You can then edit, delete, or enable/disable this connection by clicking the corresponding buttons.
- To enable this connection, check the **Enable** box.

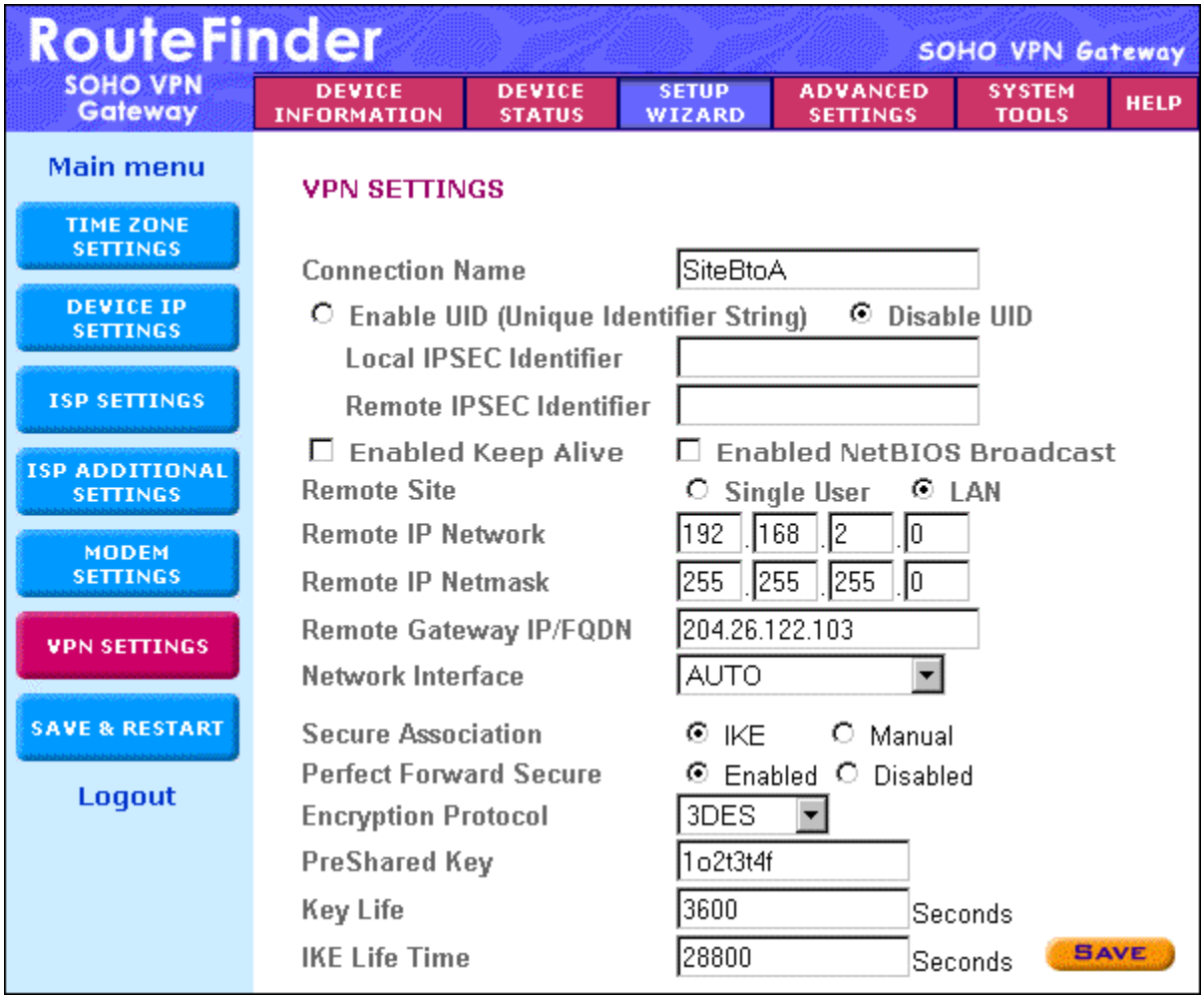
Note: If you uncheck the **Enable** box, the connection will not be active, but the parameters will remain on the screen for you to enable, edit, or delete as desired.

If you select Setup PPTP Settings, the following screen displays:



- **DNS Server** – Enter the address of the DNS Server to be used.
- **WINS Server** – Enter the address of WINS Server to be used.
- **User Authentication** – Select the User Authentication method to be used.
- **Encryption Strength** – Select the Encryption Strength desired.
- **Use RADIUS Authentication:**
  Check the Use RADIUS Authentication button to enable RADIUS. Then the following information:
  - **RADIUS Port** – Select the port number.
  - **RADIUS Server IP Address** – Enter the RADIUS Server IP Address.
  - **Secret** – Enter a secret password.
  - **Secret Confirm** – Retype the secret password for verification.
- **Use Local Client List** – Check this radio button to have your local client list used by the program.

5. The **VPN Settings** screen for entering specific VPN settings will display. The **Connection Name** (**SiteBtoA**) defaults into the first field. Continue to enter the following settings:



a) Select **Disable UID** and leave **Local IPSec Identifier** and **Remote IPSec Identifier** blank.

b) Do **not** check **Enabled Keep Alive**.

c) Do **not** check **Enabled NetBIOS Broadcast**.

d) **Remote Site –** Select **LAN**.

e) **Remote IP Network –** Enter the **Remote IP Network** address (**LAN**) for Site A. (Ex: **192.168.2.0**)

f) **Remote IP Netmask –** Enter the **Remote IP Netmask** address for Site A. (Ex: **255.255.255.0**)

g) **Remote Gateway IP –** Enter the **Remote Gateway IP** address (**WAN**) for Site A. (Ex: **204.26.122.103**)

h) **Network Interface –** Select the **Network Interface** from the drop-down list box. (Ex: **AUTO**) Selecting **AUTO** will use the WAN connection first, and if this fails to make an Internet connection, will try the serial modem interface next.

i) **Secure Association –** Select how inbound packets will be filtered. **IKE** is the default. **IKE** primarily encompasses router key exchange and the negotiation of security policy. Selecting **IKE** displays the following fields.

j) **Perfect Forward Secure –** Check the **Enabled** button.

k) **PreShared Key –** Enter the **PreShared Key** name (you can enter an alpha numeric name but it needs to match the security code for the RouteFinder at Site A. (Ex: 1o2t3t4f)

l) **Key Life –** Enter the amount of time for the router to renegotiate the Key. (Ex: 3600 seconds = 60 minutes.

m) **IKE Life Time –** Enter the amount of time that tells the router to renegotiate the IKE security association. For example, 28800 seconds is 8 hours.

6. Once the VPN settings are entered, click on the **Save** button, the **Connection Name** will display on the lower half of the screen and on the initial VPN Settings screen. You can enable/disable, edit, or delete this connection by clicking the corresponding buttons. To enable this connection, check the **Enable** box that appears to the left of the connection name.

   Note: If you uncheck the **Enable** box, the parameters will remain in the table for you to enable/disable, edit, or delete at any time.

7. After you have finished making all the changes on the various pages, click **Save and Restart** to save the settings and restart the device**.** After the restart, the device will function according to the saved settings.

8. During the save and restart process, system messages will let you know that you have successfully configured the settings for the device and saved the settings. You will see a status bar across the bottom of your browser showing the progress of the startup process. The RouteFinder home page will be loaded automatically after restart is completed.

This completes the configuration of the RF550VPN/RF560VPN at Site B.

Testing Your Configuration

1. Follow the same procedure as in example 1 using the **PING** command to test your configuration. Since the RF550VPN/RF560VPN is using a dynamic IP at Site B, it will be necessary to initiate a successful PING from Site B to A before PINGing from Site A to B.

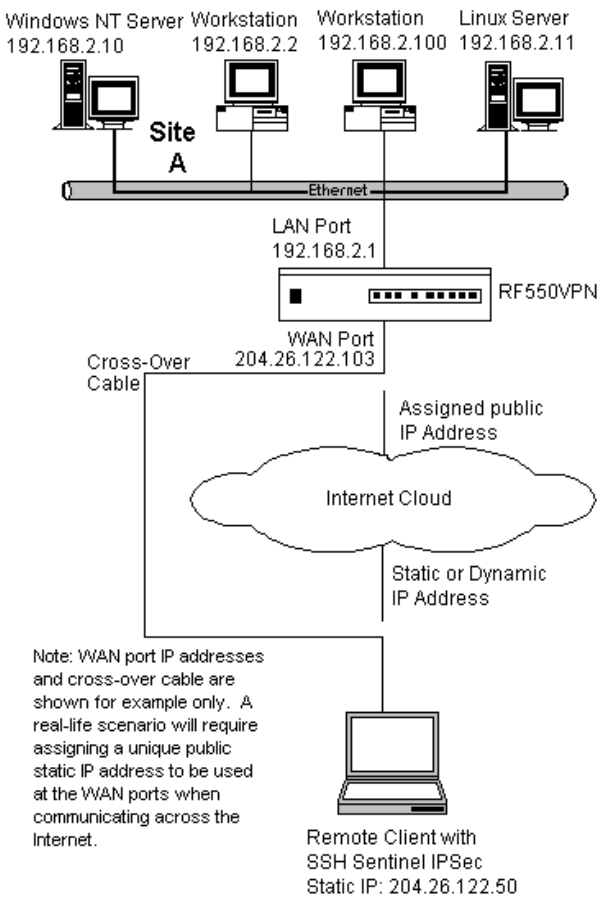
Example 4

The RF550VPN/RF560VPN RouteFinder provides an easy-to-use IPSec VPN client connection that transparently secures your Internet communications anytime, anywhere. This example will show the setup procedure for the RF550VPN/RF560VPN to allow a remote client to see a LAN, where the remote client is using SSH Sentinel version 1.3. To see Sentinel version 1.4 screens, refer to the SSH Sentinel Client Reference Guide on the Multi-Tech Web site.

Note: The illustration labels the RouteFinder as the RF550VPN, but it stands for the RF560VPN also.

SSH Sentinel Client Accessing LAN Through RF550VPN/RF560VPN RouteFinder

1. Domain name = StaticSentinel
2. Public Class C = 204.26.122.x
3. SETUP WIZARD > DEVICE IP SETTINGS
   IP Address: 192.168.2.1
   IP Subnet Mask: 255.255.255.0
4. SETUP WIZARD > ISP SETTINGS
   Select 'Static IP Settings'
   IP assigned by your ISP: 204.26.122.103
   IP Subnet Mask: 255.255.255.0
   ISP Gateway Address: 204.26.122.50
5. SETUP WIZARD > VPN SETTINGS
   Connection Name = IPSec Pass Through
   Disable (do not check) 'Enable UID'
   Disable (do not check) 'Keep Alive'
   Disable (do not check) 'NetBIOS Broadcast'
   Remote Site = LAN
   Remote IP Network = 204.26.122.50 (static IP)
   Remote IP Network = 0.0.0.0 (dynamic IP)
   Remote IP Netmask = 255.255.255.255 (static)
   Remote IP Netmask = 0.0.0.0 (dynamic IP)
   Remote Gateway IP = 204.26.122.50 (static)
   Remote Gateway IP = 0.0.0.0 (dynamic IP)
   Network Interface = WAN ETHERNET
   Secure Association = IKE
   Perfect Forward Secure = Enabled
   Encryption Protocol = select 3DES
   Preshared Key = 1o2t3t4f
   Key Life = Set to default
   IKE Life Time = Set to default



Note: Make sure that all routers between both SSH IPSec ends can route IP protocol 50 (IPSec). Sometimes routers are configured to route only TCP (protocol 6), UDP (protocol 17) and ICMP (protocol 1) and drop all other protocols. VPN routers configured that way won't work with IPSec!

Example 4: RF550VPN/RF560VPN Configuration Procedure at Site A

Note: Configure the RF550VPN/RF560VPN at Site A same as was explained in the RF550VPN/RF560VPN-to-RF550VPN/RF560VPN Example 1, **with the exception of the following changes:**

1. For **ISP Settings,** under **SETUP WIZARD,** check the box **Your ISP requires you to input IP settings** and enter the following information.

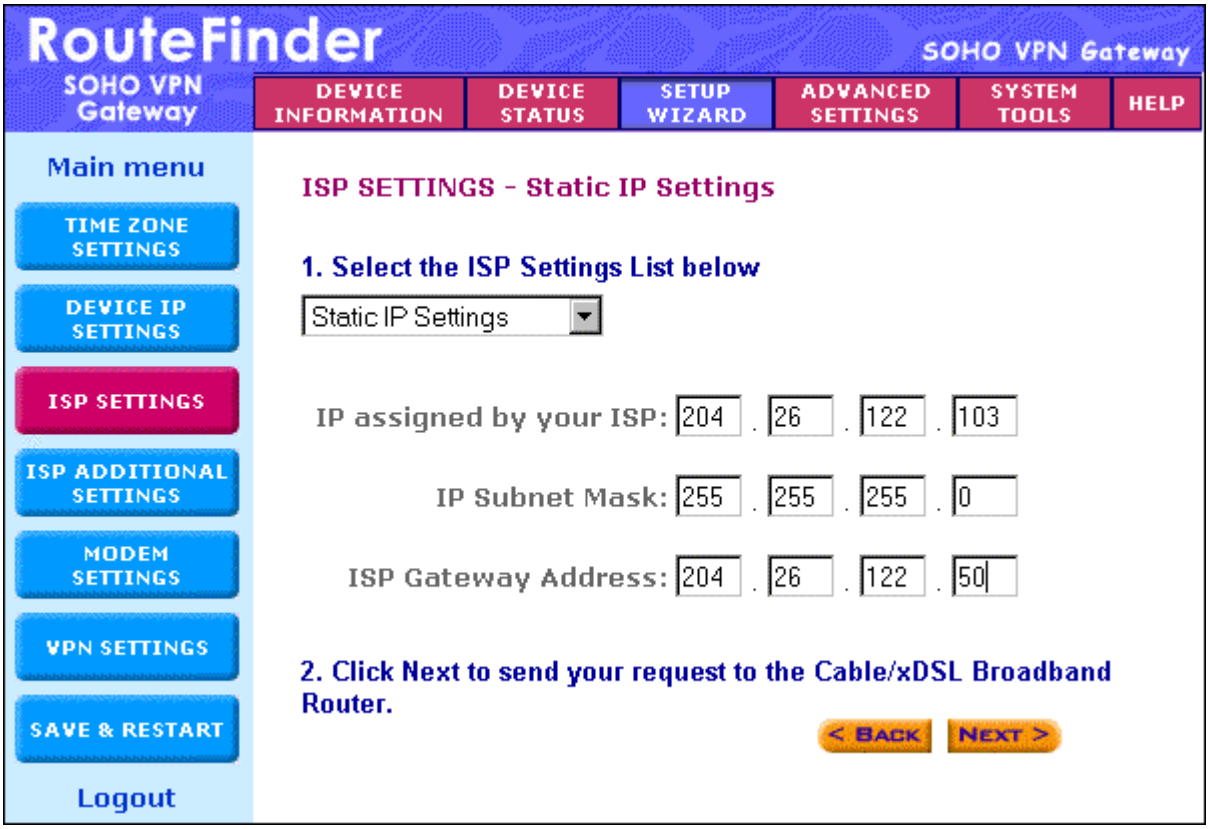
   a) **IP Assigned by your ISP:** This is the IP address of the WAN port on the RF550VPN/RF560VPN. (Ex: 204.26.122.103)

   b) **IP Subnet Mask:** This is the IP address of the subnet mask for the WAN port on the RF550VPN/RF560VPN.

   (Ex: 255.255.255.0)

   c) **ISP Gateway Address:** This is the IP address of the ISP gateway. For this example connecting the client to the RouteFinder using a cross-over cable, you can use the IP address of the SSH Sentinel client. (Ex: 204.26.122.50)

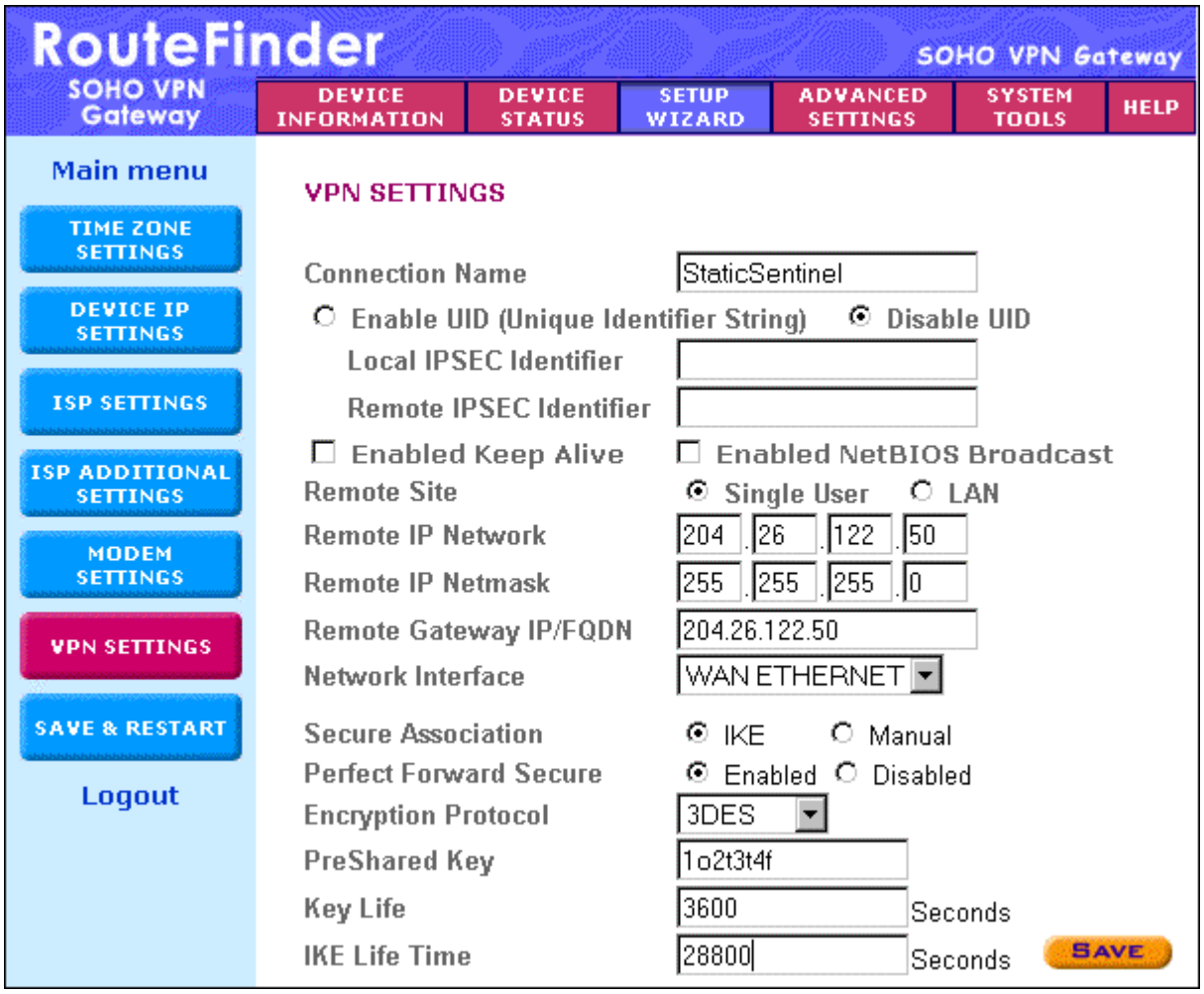
   Click the **Next** button.


RouteFinder
SOHO VPN Gateway
SOHO VPN Gateway
DEVICE INFORMATION
DEVICE STATUS
SETUP WIZARD
ADVANCED SETTINGS
SYSTEM TOOLS
HELP
Main menu
TIME ZONE SETTINGS
DEVICE IP SETTINGS
ISP SETTINGS
ISP ADDITIONAL SETTINGS
MODEM SETTINGS
VPN SETTINGS
SAVE & RESTART
Logout
ISP SETTINGS - Static IP Settings
1. Select the ISP Settings List below
Static IP Settings
IP assigned by your ISP: 204 . 26 . 122 . 103
IP Subnet Mask: 255 . 255 . 255 . 0
ISP Gateway Address: 204 . 26 . 122 . 50
2. Click Next to send your request to the Cable/xDSL Broadband Router.
< BACK
NEXT >

Note: For this scenario it is not necessary to enter any information for the **ISP Additional Settings** or **Modem Settings**.

2. Click the button on the left side of the screen for **VPN Settings**. Use this screen to enter the LAN-to-Client VPN connection name: In the **Connection Name** field, type a name that identifies for you a connection that you would like to make. (Ex: **StaticSentinel**). Click the **Add** button.

3. The **VPN Settings** screen for entering specific VPN settings will display. The **Connection Name** (**StaticSentinel**) defaults into the first field. The issue of dynamic versus static IP at the client is addressed in the steps listed under this screen shot. Continue to enter the following settings:



a) Select **Disable UID** and leave **Local IPSec Identifier** and **Remote IPSec Identifier** blank.

b) Disable (do not check) **Keep Alive**.

c) Disable (do not check) **NetBIOS Broadcast**.

d) **Remote Site** = LAN

e) **Remote IP Network –** Enter the **Remote IP Network** address. Since there is no remote **LAN,** enter the static IP **204.26.122.50** of the SSH client. If Sentinel client is using a dynamic IP, enter 0.0.0.0.

f) **Remote IP Netmask –** Enter the **Remote IP Netmask** address. Since there is no remote **LAN,** enter **255.255.255.255** for a static IP. If Sentinel client is using a dynamic IP, enter 0.0.0.0.

g) **Remote Gateway IP –** Enter the **Remote Gateway IP** address (**WAN**) for the Sentinel client. If the client is using a static IP, enter the IP address. (Ex: **204.26.122.50**) If the Sentinel client is using a dynamic IP, enter 0.0.0.0.

h) **Network Interface –** Select the **Network Interface** from the drop-down list box. (Ex: **WAN Ethernet**)

i) **Secure Association –** Select **IKE** to set how inbound packets will be filtered. **IKE** is the default. **IKE** primarily encompasses router key exchange and the negotiation of security policy. Selecting **IKE** displays field g-k.

j) **Perfect Forward Secure –** Check the **Enabled** button.

k) **Encryption Protocol** – Select the encryption protocol used for your configuration. The default protocol for the RF550VPN/RF560VPN communicating with another RF550VPN/RF560VPN is **3DES**. (Ex: **3DES**)

l) **PreShared Key –** Enter the **PreShared Key** name (you can enter an alphanumeric name but it needs to match the security code for the Sentinel client). (Ex: **1o2t3t4f**)

m) **Key Life –** Enter the amount of time that tells the router to renegotiate the Key. For example, 3600 seconds is 60 minutes.

n) **IKE Life Time –** Enter the amount of time that tells the router to renegotiate the IKE security association. For example, 28800 seconds is 8 hours.

4. Once the VPN settings are entered, click on the **Save** button, the **Connection Name** will display on the lower half of the screen and on the initial VPN Settings screen. You can enable/disable, edit, or delete this connection by clicking the corresponding buttons. To enable this connection, check the **Enable** box that appears to the left of the connection name.

   Note: If you uncheck the **Enable** box, the parameters will remain in the table for you to enable/disable, edit, or delete at any time.

This completes the configuration of the RF550VPN/RF560VPN at Site A. Now configure the Sentinel Client.

Example 4: Remote Client Configuration Procedure using SSH Sentinel 1.3

Note: To achieve this setup, you must install and run SSH Sentinel version on Windows 2000 Professional.

1. Before installing SSH Sentinel, be sure to uninstall all other versions of IPSec client. This example is using SSH Sentinel version 1.3. To see SSH Sentinel version 1.4 screen shots, refer to the SSH Sentinel Reference Guide on the Multi-Tech Web site.

2. Install the Sentinel IPSec client using the **InstallShield Wizard** and select all the defaults as you move through the setup screens.

3. Click **Next** on the **Welcome** screen.

4. Click **Yes** for the license agreement.

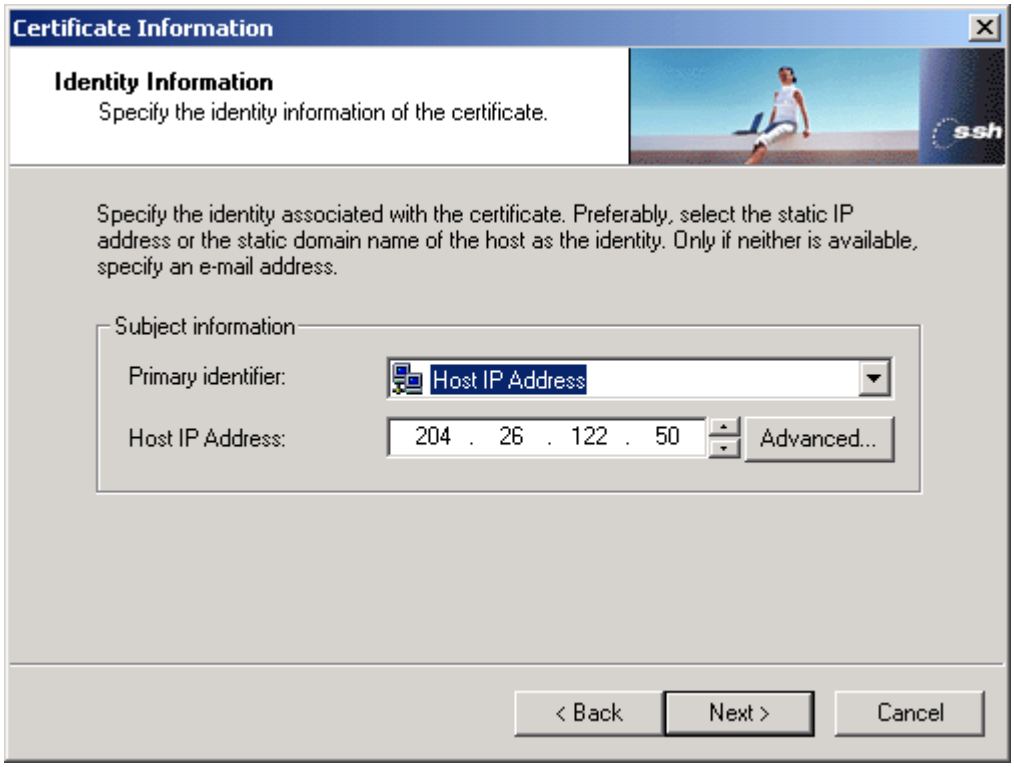
5. Click **Next** to use the default installation destination path.

6. Click **Next** to display the default program folder.

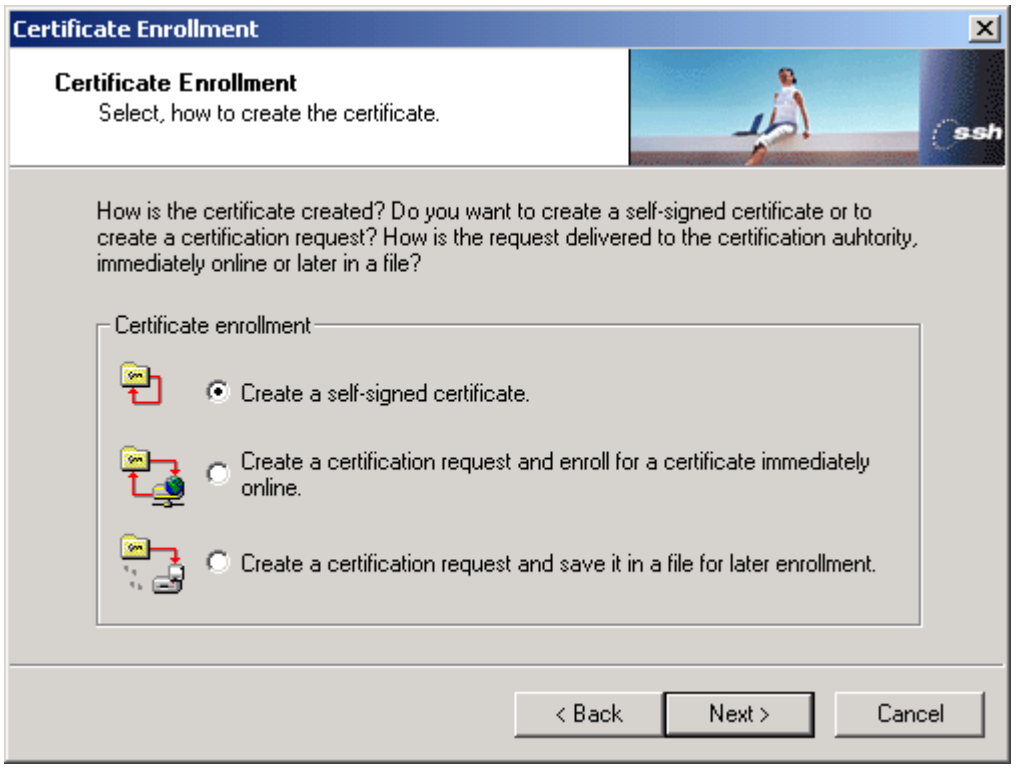
7. Sentinel will now install.

8. On the next screen move the mouse around to generate a host authentication keypair, when complete, click **Next**.

9. At the **Authentication Key Information** Screen select the **Host IP Address** for the **Primary Identifier**. Then the IP Address for the Windows 2000 system should appear in the **Host IP Address** window. In our example this would be 204.26.122.50.


Certificate Information
Identity Information
Specify the identity information of the certificate.
ssh
Specify the identity associated with the certificate. Preferably, select the static IP address or the static domain name of the host as the identity. Only if neither is available, specify an e-mail address.
Subject information
Primary identifier:
Host IP Address
Host IP Address:
204 . 26 . 122 . 50
Advanced...
< Back
Next >
Cancel

10. At the **Certificate Enrollment Method** screen select the default choice of **Create a self-signed certificate**.


Certificate Enrollment
Certificate Enrollment
Select, how to create the certificate.
ssh
How is the certificate created? Do you want to create a self-signed certificate or to create a certification request? How is the request delivered to the certification auhtority, immediately online or later in a file?
Certificate enrollment
Create a self-signed certificate.
Create a certification request and enroll for a certificate immediately online.
Create a certification request and save it in a file for later enrollment.
< Back
Next >
Cancel

11. Now the **Encryption Speed Diagnostics** screen is displayed. You have the option of skipping this test. Click on **Skip** or wait until the diagnostic has finished and click on **Next**.

12. Click on **Finish** and allow the system to reboot.

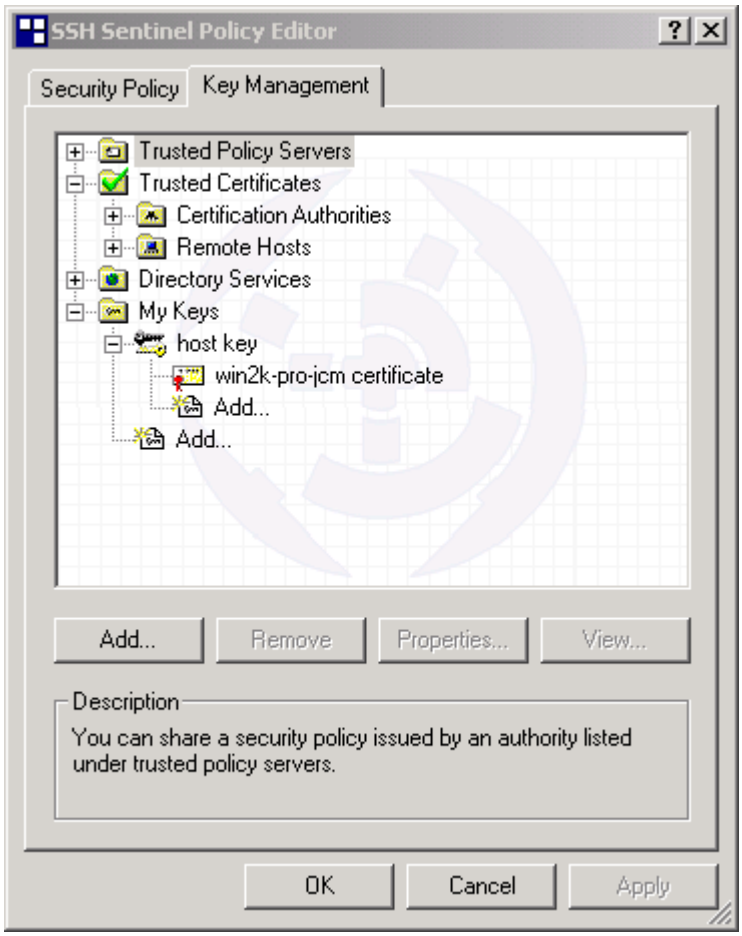
SSH Sentinel Installation
ssh
SSH Sentinel installation completed
The software is successfully installed. The modification made to the operating system kernel are not put into effect before you restart your computer.
Would you like to restart your computer?
Yes, restart the computer.
No, I will restart at a later time.
Please remove any disks from their drives, and click Finish to complete setup.
< Back
Finish
Cancel

13. Once Windows has rebooted, right click on the SSH icon at the bottom right-hand corner of your screen.

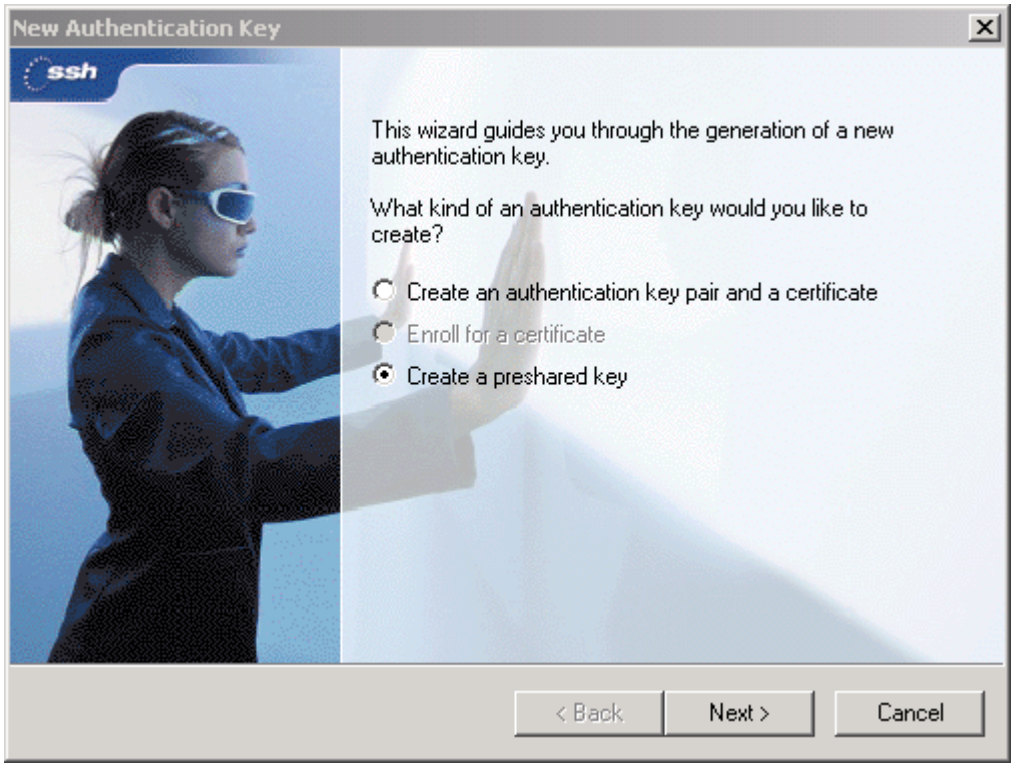
14. Select **Run Policy Editor**.

15. Click on the **Key Management** tab at the top of the SSH window.

16. Highlight **My Keys** and click on **Add** to create a new Authentication Key.



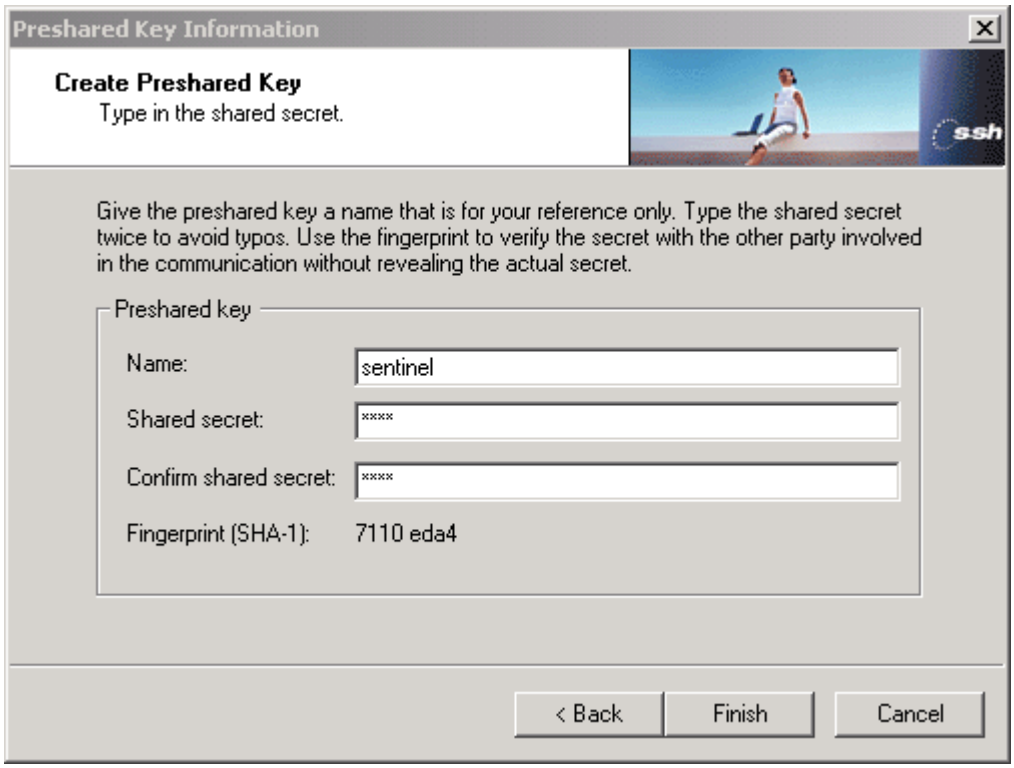
17. Check the **Create a preshared key** checkbox and click **Next**.


New Authentication Key
ssh
This wizard guides you through the generation of a new authentication key.
What kind of an authentication key would you like to create?
Create an authentication key pair and a certificate
Enroll for a certificate
Create a preshared key
< Back
Next >
Cancel

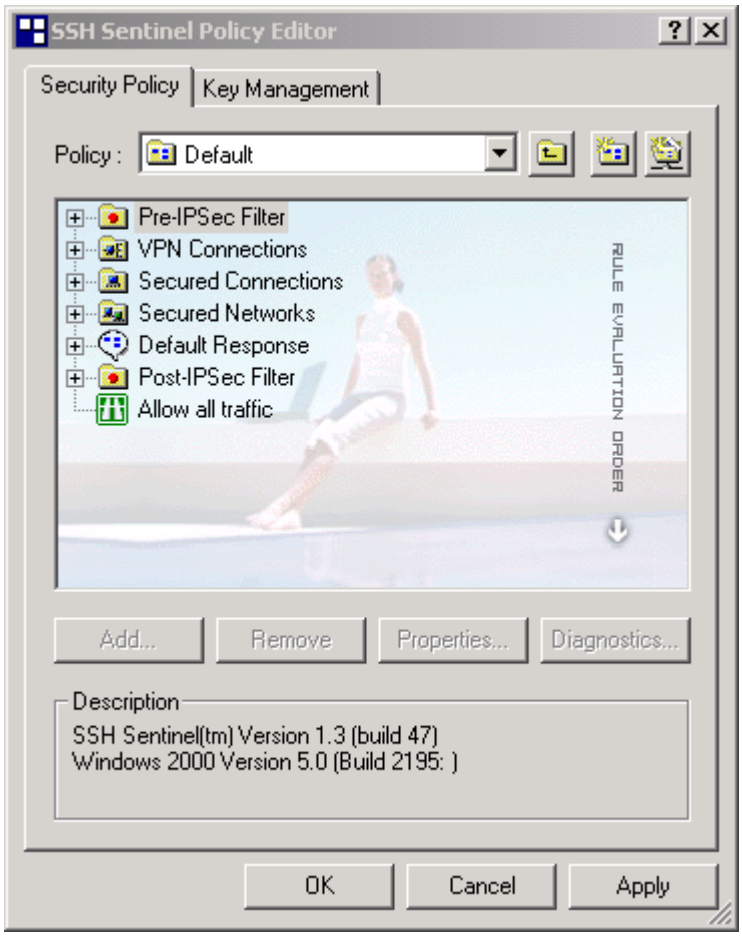
18. Enter the **Preshared key information** and click on **Finish**. The **Shared secret** needs to match what was entered for the RF550VPN/RF560VPN in step 3.

    Key name = Sentinel
    Shared secret = 1o2t3t4f

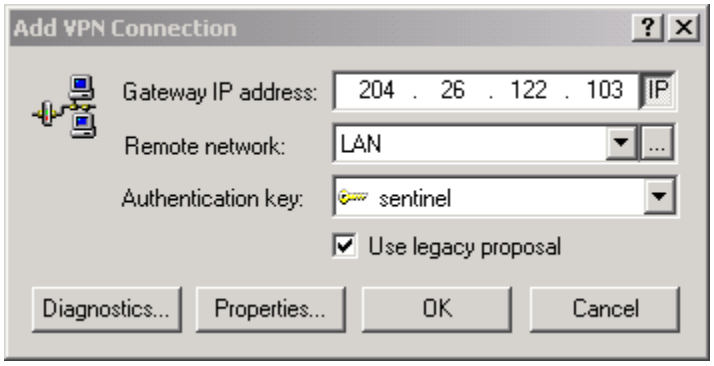
19. Click on **Finish**.


Preshared Key Information
Create Preshared Key
Type in the shared secret.
ssh
Give the preshared key a name that is for your reference only. Type the shared secret twice to avoid typos. Use the fingerprint to verify the secret with the other party involved in the communication without revealing the actual secret.
Preshared key
Name:
sentinel
Shared secret:
****
Confirm shared secret:
****
Fingerprint (SHA-1):
7110 eda4
< Back
Finish
Cancel

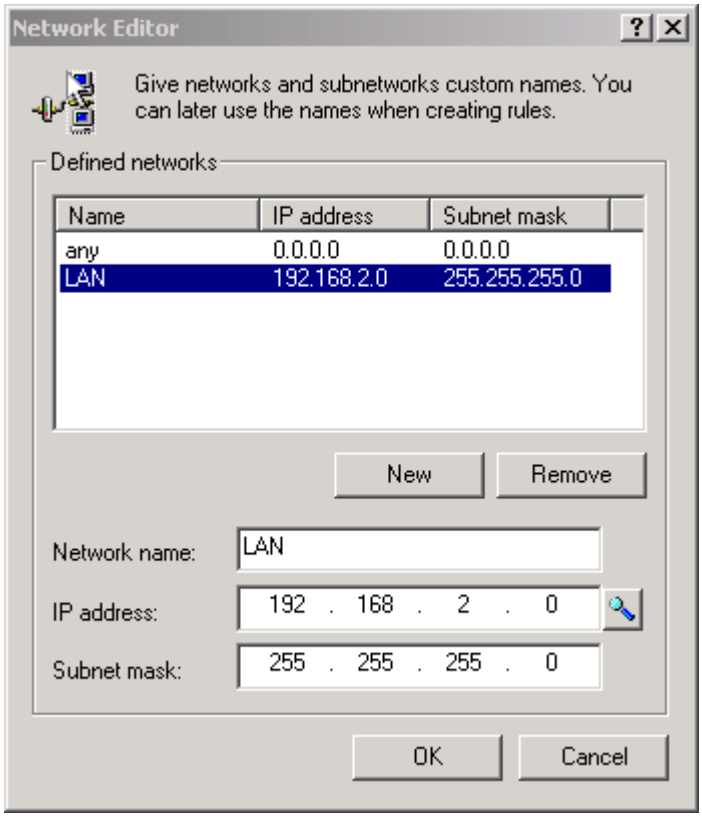
20. Click **Apply** and then the **Security Policy** tab at the top. Double-click **VPN Connection.** Click **Add**.



21. At the **Add VPN Connection** screen enter the **Security Gateway** information. Click on **IP** and enter the public (WAN) IP address of the RF550VPN/RF560VPN (204.26.122.103). Click on the down arrow for the **Authentication key** and select the key name that was created in step 18(sentinel). Check the box for **Use Legacy Proposal.**

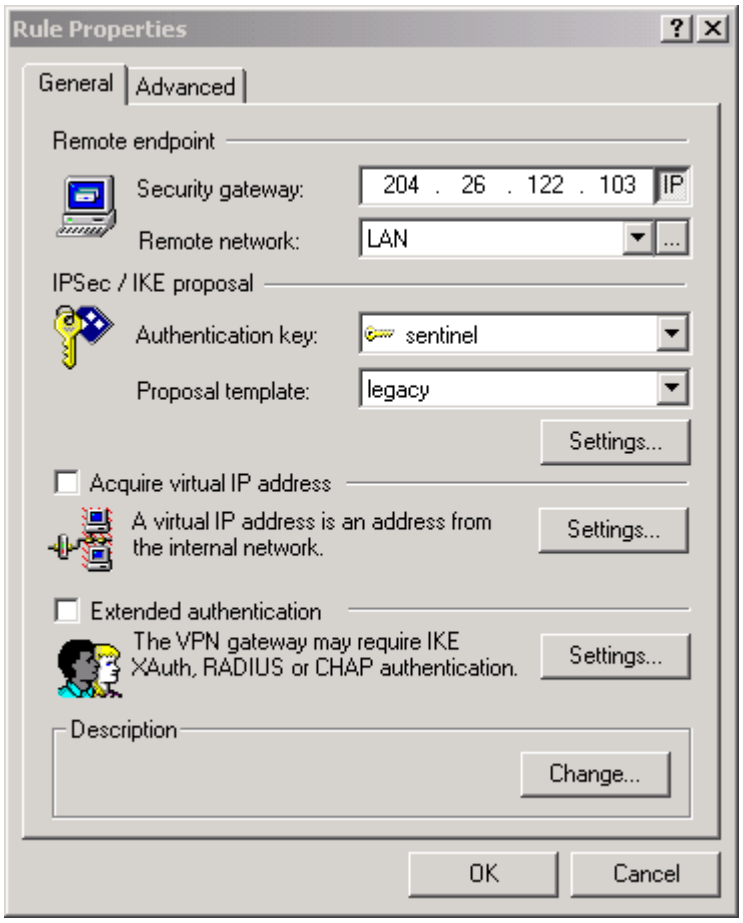


22. Click on **…** to enter the **Remote Network IP address** and **Subnet mask** for the LAN side of the RF550VPN/RF560VPN (192.168.2.0; 255.255.255.0). Click on **New**, enter the **Network name**, the **IP address** and the **Subnet mask** for the LAN side of the RouteFinder. (Example: LAN, 192.169.2.0, 255.255.255.0) Then click **OK** at the **Network Editor** screen and then click **OK** again at the **Add VPN Connection** screen.



23. Now back at the **Policy Editor** screen, highlight the connection you just created (204.26.122.103) and click on **Properties**.

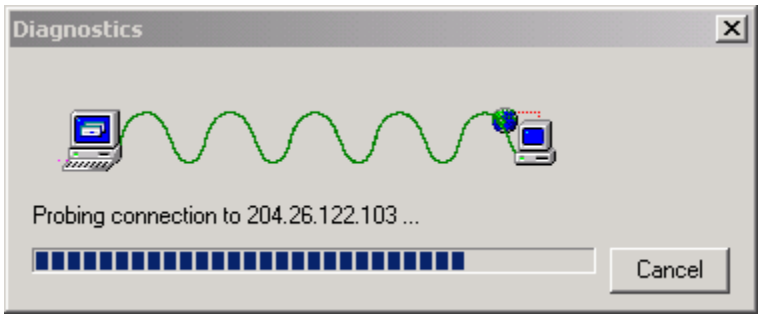
24. The **Connection Properties** | **General** screen is displayed. Click on **Settings…** under **IPSec / IKE proposal** and verify that the **PFS Group** is set to **Group 2**. Click on **OK**.



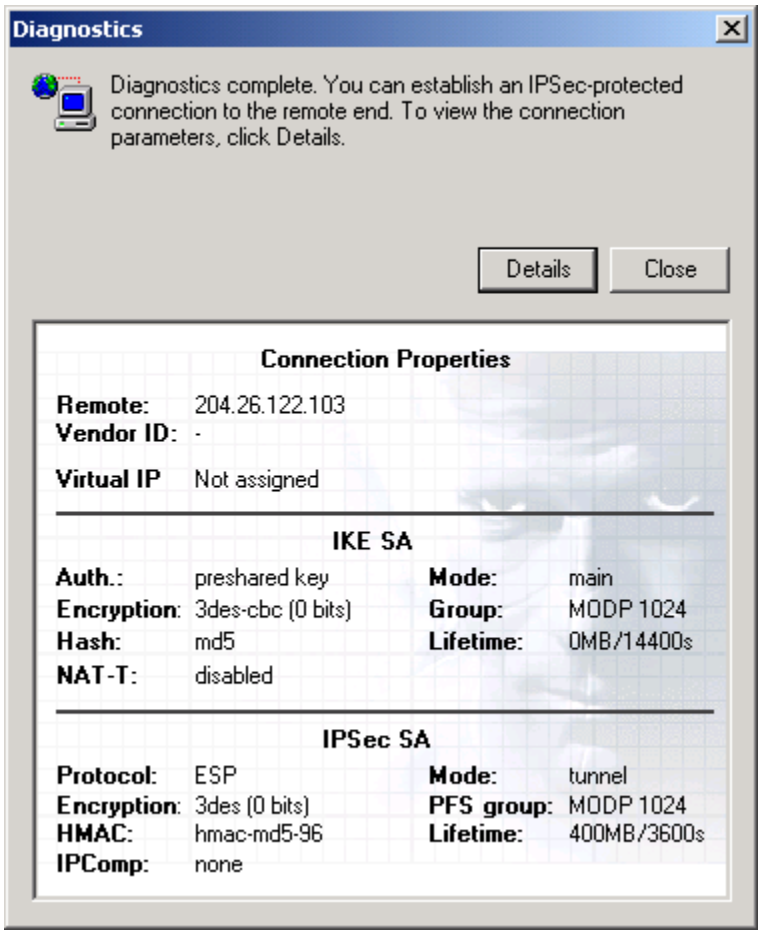
25. Click on the **Advanced** tab. Check the box for **Open on start-up**. Then click on **OK** to close the **Rule Properties** screen.

26. Now back at the **Policy Editor** screen, click on **Apply**, and then click twice on **VPN Connection**. Highlight the connection you just created (204.26.122.103) and click on **Diagnostics**.

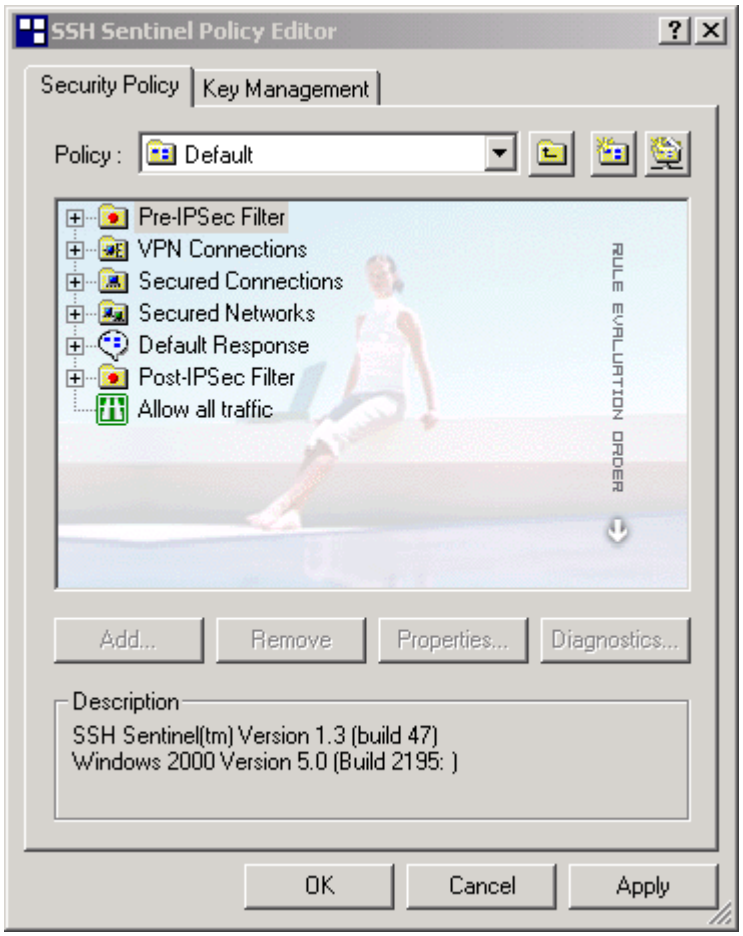
27. Sentinel will probe for a connection to the RF550VPN/RF560VPN and should be successful.



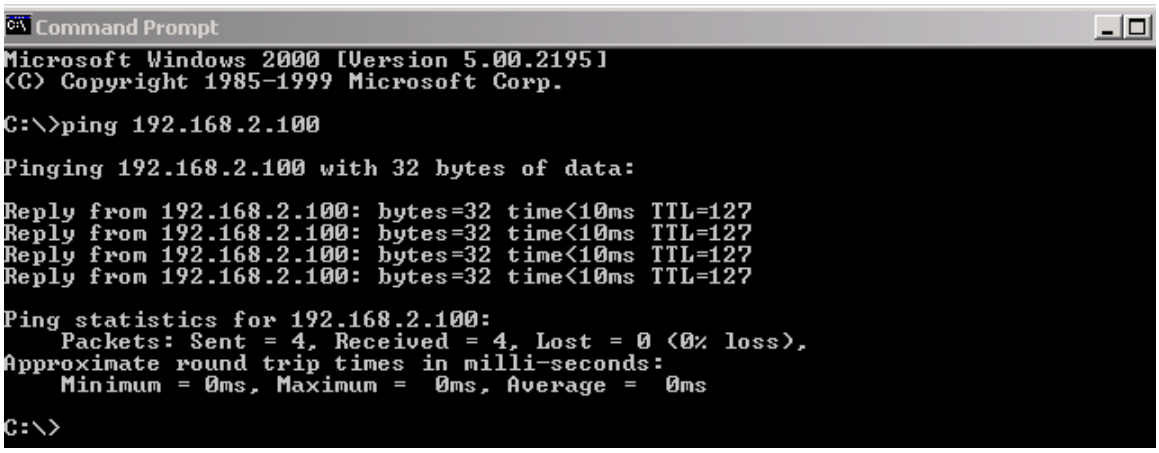
28. Click **Details**. Details of the newly created connection are displayed.



29. Verify the connection details information and click **Close**.



30. Click **OK** to close the SSH Sentinel window.
31. Open a DOS command prompt window and attempt to **PING** the LAN located behind the RF550VPN/RF560VPN. If the PING is successful, the configuration process to connect SSH Sentinel client to an RF550VPN/RF560VPN RouteFinder is complete. If **PING** fails, stop and restart the Sentinel Policy Manager. If still fails, check cabling and software configuration at both locations.



Note: The Sentinel Policy Manager may need to be stopped and started in order for you to successfully **PING** the remote LAN. Once you can **PING** the remote LAN, do not run the diagnostics test again, otherwise, you will have to stop and start the policy manager in order to once again **PING** successfully.